DELUXE

MUSIC

CONSTRUCTION SET™

MANUAL

ELECTRONIC ARTS™
DELUXE CREATIVITY SERIES

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CONSTRUCTION SET™

MANUAL

GEOFF BROWN

Stick your head into Geoff Brown's garage and you'll see why the van's parked outside. There are computers and musical instruments everywhere: a drum set there, a piano over there, a tower of Lisa's and Mac's (stacked on one another to save space) against the wall, a synthesizer keyboard...the list goes on.

Ask Geoff about life B.G. (Before Garage), and he sketches a line that connects now fabled software milestones. Stints at Bolt, Beranek, and Newman, working on speech/language understanding, and graphic simulation software; time working at Xerox; then on to Apple and Lisa. Each was a source of new insights into how to turn the computer over to people as a medium for work and play.

Throughout it all there was music. Music at the drum set, listening to the textures, holding the rhythmic center firm. Music with friends, playing and talking, imagining how music would be when computers became affordable for everyone. Along the way he met John MacMillan, another soul afflicted with dreams of musical machines, a pro willing and able to share the work.

This is the first of their dreams made real. There are more to come. "Listen to this," Geoff says as he turns to the stack of computers, "and watch..." Glimpses of still more amazing tools dance on the computer screens and sing through the speakers as he works.

JOHN MACMILLAN

As a math major at Stanford University, John MacMillan was trained to spot the interrelationships and permutations that can be achieved in mathematical formulae. He quickly saw that computers were the embodiment of mathematical flexibility. Code your program this way and the computer draws pictures. Code your program that way and the computer plays music. Fascinated by these anything machines, John studied computer science and learned to program.

It wasn't long before John traded the hallowed halls of Stanford for the harried halls of Apple, where he worked with Geoff Brown on the Lisa project. You may ask, now that John has brought his vision and foresight into reality on the Amiga, what's next? Only John can answer that question, for it's written in the numbers.

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Appendix A: Using MIDI A.1

For hundreds of years creating music and recording it in written form has been a tedious process. Even a musical genius such as Wolfgang Amadeus Mozart, who could hear his music in his head and immediately play it, had to spend long hours recording his music note-by-note on paper. Now all that has changed. Personal computers and music composition software are doing for musicians what the word processor has done for writers — freeing them to be more creative while boosting their productivity to new heights. And Deluxe Music Construction Set is in the forefront of this musical revolution.

Deluxe Music Construction Set lets you turn a personal computer into a desktop music publishing studio. You can quickly enter music into the onscreen staffs using the mouse, then listen to the piece for immediate feedback. Something a little off pitch? Click the offending note and move it up or down the scale until it sounds just right.

Not only does *Deluxe Music Construction Set* sound great, but it looks great too. You'll be able to see your sheet music onscreen exactly as it appears when printed. *Deluxe Music Construction Set* uses all the correct music notation and dynamic modifier (see Glossary) symbols you'll need to produce high quality sheet music. Couple this powerful software with a laser printer, and you'll produce sheet music that looks like it's straight out of a music shop.

Whether you're a budding or a professional musician, you'll find *Deluxe Music Construction Set* a valuable addition to your musical tools. Beginning musicians will find *Deluxe Music Construction Set* an invaluable learning aid. Need to enter a triplet in your practice score? Select it from the Note Palette and *DMCS* does the rest. Professional musicians will love *Deluxe Music Construction Set* 's MIDI capabilities. Simply play your composition with your compatible sequencer software, then save it in SMUS format. *DMCS* reads the SMUS file and produces near-professional quality sheet music — what Lennon and McCartney (who didn't know musical notation) would have given for this feature!

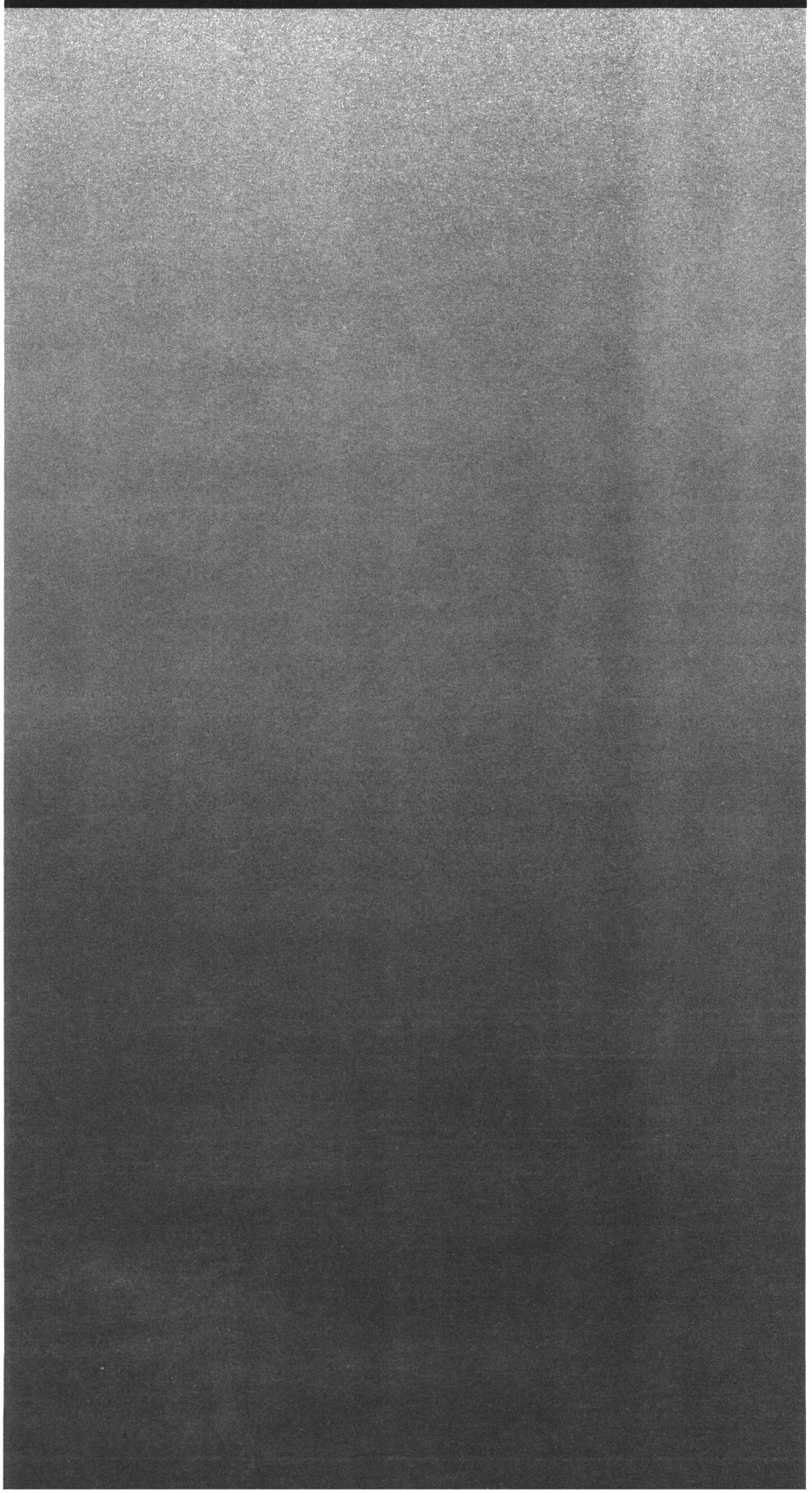
HOW THIS MANUAL IS ORGANIZED

This manual does not teach you music, music theory, or how to use your computer. This manual does, however, teach you how to use *Deluxe Music Construction Set*, and we recommend that you read through the manual carefully, whether you are a beginner or a professional musician.

If you just want a quick taste of *Deluxe Music Construction Set*'s capabilities, read through the "Deluxe Music Construction Set Overview" presented at the beginning of Chapter 1.

Later, when you're ready to become a *Deluxe Music Construction Set* power user, work through the "Deluxe Music Construction Set Tutorials" in Chapter 2.

Chapter 3, "Deluxe Music Construction Set Reference" outlines the program's keyboard commands, windows, and menus for quick reference as you use the program. Chapter 3 contains information you can apply as you use *DMCS*, and two glossaries of computer and music terms. Following Chapter 3, you'll find one appendix that provides overviews of *DMCS'* MIDI capabilities, and how to use *DMCS* with other Deluxe products. A complete subject index is at the very end of this manual.



NOTES

The first thing you should do before starting Deluxe Music Construction Set is set up your working disks. Follow the instructions in your Amiga manual to make your working copies, then start the program using the working copy, not the master disk.

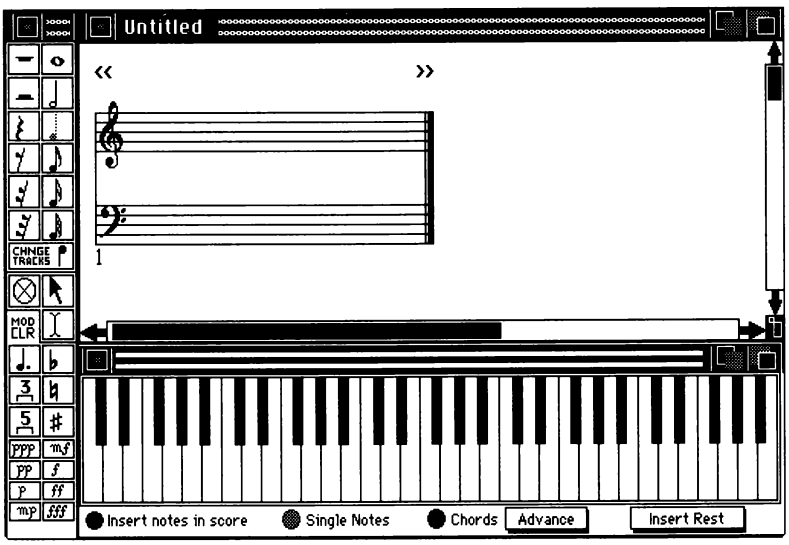


Figure 1.1: Deluxe Music Construction Set

I GETTING STARTED

Deluxe Music Construction Set uses a number of pull-down menus and onscreen windows that you manipulate with the mouse and keyboard. When using the mouse, you activate the menus and submenus with the right mouse button, and the screens and requester buttons (gadgets) with the left. The Score window is center stage in *Deluxe Music Construction Set* (see Figure 1.1) and that's where you enter, edit, and review your music. You enter music in the Score window in one of three ways: by loading from disk (several pieces of music are included with *Deluxe Music Construction Set*); by selecting notes from the Note Palette window (see Figure 1.2) and "dropping" them onto the staff; or by selecting the "insert notes in score" box in the Piano Keyboard window (see Figure 1.3), then "playing" the piano keys with the mouse.

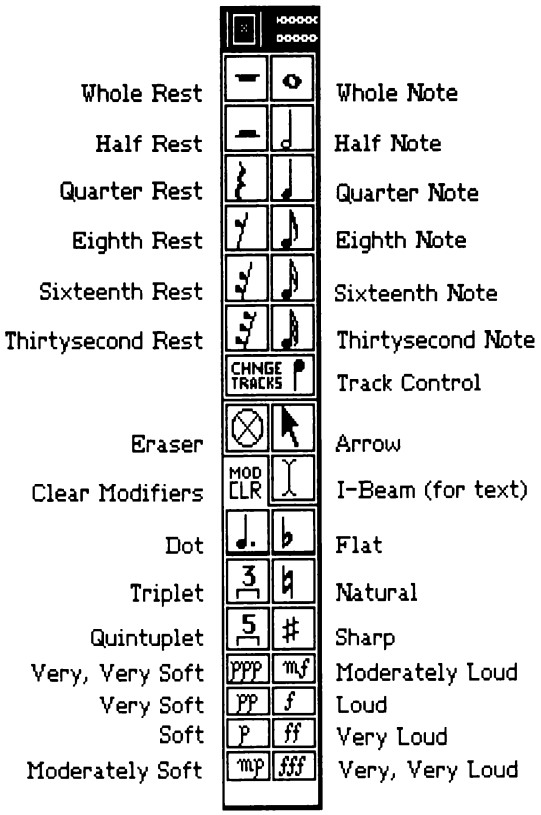


Figure 1.2: Note Palette Window

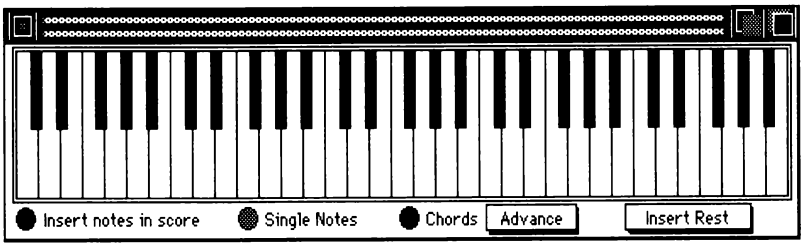


Figure 1.3: Piano Keyboard Window

For example, two other windows, Score Setup and Show Memory (see Figures 1.4 and 1.5), don't appear automatically at start up but can be opened from the Window and File menus respectively. All *DMCS* windows can be opened this way, or brought to the top if they are already open. You can also bring windows to the front or send them to the back by clicking the front and back gadgets at the right end of a window's title bar.

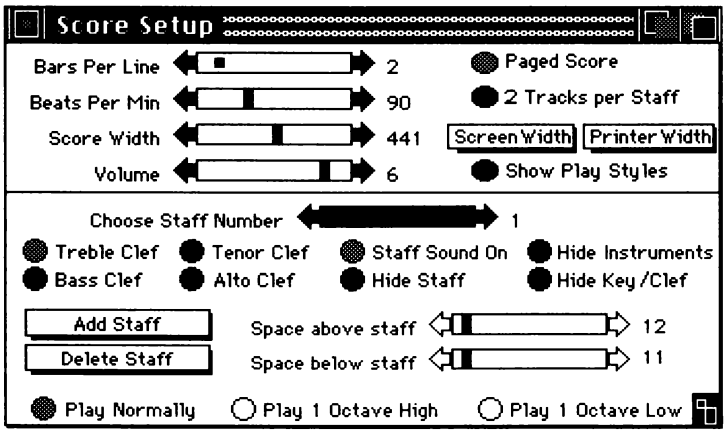


Figure 1.4: Score Setup Window

Figure 1.5: Show Memory Window

Any visible portion of a *Deluxe Music Construction Set* window is always active. Because of this, you can use several windows at once without first having to make one particular window active.

Being able to use different windows at the same time is important because each window contains information or controls you may want to use or compare with controls and information in one or more of the other windows. With the exception of the Score window, each window remains onscreen until you close it (using the close box on the left end of the title bar), and each window can be moved around (by clicking and dragging the title bar) to a more convenient screen location. The Score window, though, is never closed. You either load, save, or override a specific score by loading another.

Additionally, the Score Setup and Score windows allow you to shrink or expand the amount of information shown by using the box in the lower right hand side of the window. In short, *DMCS* is designed to give you maximum flexiblity so you can tailor the screen to suit your own working style.

II LOADING AND PLAYING MUSIC

The File menu lets you open a blank score or an existing score from disk. Select New Score to open a blank score when you want to start a new composition from scratch or Open Score to load existing music from disk. When you select Open Score, a requester appears showing you all the files on the current disk (see Figure 1.6). You can look at other disks or hard disk drawers by clicking the Drive buttons (known in the Amiga world as 'gadgets') in the requester, or you can cancel the whole operation by clicking the Cancel button. For now, let's take a look (and listen) at one of the files on your *DMCS* Music disk. Using the mouse, click on the drawer "Music (Dir)" and it will open. Click the file name "Passacaglia", then click the OK button.

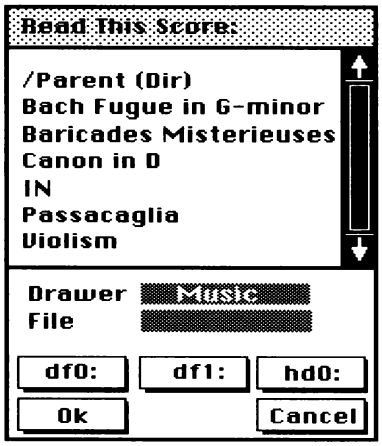


Figure 1.6: The 'Read This Score' Requester Box

When the score window for Passacaglia opens, you can use the commands in the Play menu to play all or part of the song. You can also use the controls in the Score Setup window to control aspects of the playback.

Choose Play Song from the Play menu to play the song from beginning to end. Press the Space Bar to freeze the song on the bar and note being played at that instant. Now use Resume Play to restart the playback from that point. To stop the playback before the end of the song without marking the stopping point in the score, choose Stop Play from the Play menu. Using Stop Play stops the playback and returns *DMCS* to the beginning of the score.

Now that you know how to start and stop the music, select the Score Setup window from the Window menu and experiment with its controls to alter the way the song is played. (For detailed information about the Score Setup window, see "III. Setting Up the Score" in Chapter 3.)

The following section shows you how to select specific notes and measures for editing. Leave the Passacaglia score open and read the following section when you are ready to move on.

SELECTING NOTES AND MEASURES

You enter music into a score one note at a time, but once it is entered, you can manipulate it in much larger chunks. For instance, suppose you have a chorus that you want to repeat on the fourth, eighth, and twelfth measures. Create the chorus *once* in the fourth measure, then use the Copy and Paste commands from the Edit menu to copy the chorus from the fourth measure and duplicate it in the eighth and twelfth measures. *Deluxe Music Construction Set* also lets you change the octave and time values for single or multiple notes.

SELECTING SINGLE OR MULTIPLE NOTES AND CHORDS

To select a single note or chord in a score, first select the arrow tool in the Note Palette (Figure 1.2), then click directly on the note or chord you want to change. *Deluxe Music Construction Set* displays selected notes in red as shown in Figure 1.7. To select an entire, multiple-note section of music, click and hold the left mouse button above the upper-left corner of any group of notes and chords. Continue to hold the mouse button and drag toward the lower-right corner of your selection. As you drag the mouse, a selection box encompasses all the notes and measures you drag across. When you release the mouse button, all the notes within the selection box are selected and displayed in red.

♪ *Ties, slures, beams, and other modifiers do not turn red, but they are selected and affected by your editing operations nonetheless.*

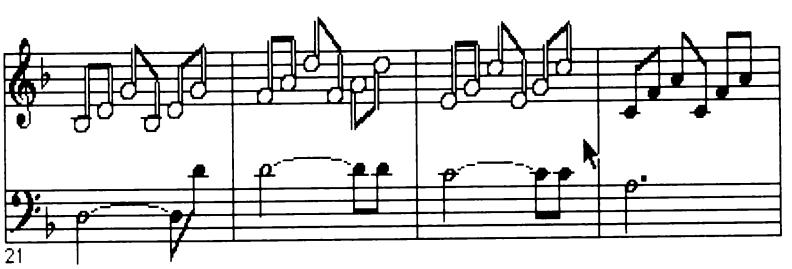


Figure 1.7: Selected Notes in a Score

You can also use the Shift key to select a section that is too large to fit in the Score window. For instance, you can select the entire Passacaglia score by clicking the first note in the score, using the scroll bar to move to the end of the score, then holding down the Shift key and clicking the last note of the score. This method selects everything between the positions of the two mouse clicks. Using the Select All command from the Edit menu also selects the entire score

Once the passage has been selected, you can manipulate it in a number of ways. You can use the Cut, Copy, and Paste commands from the Edit menu as described above, or you can use the commands from the Notes menu to change the pitch, octave, duration, or play style of the selected notes.

SELECTING MEASURES

Other commands, such as those in the Measures menu, affect entire measures rather than notes only. Identify a measure to work with by selecting one or more notes in the measure, or by clicking the arrow tool in the measure between the notes. Clicking the arrow tool on a blank section of a measure puts the *insertion point* , a flashing line, in that measure. Once a measure has been selected, you can set commands such as tempo or key signature (see Glossary) changes that affect all the notes in the measure. Clicking the insertion point into a measure also identifies the *specific location* to perform commands like Insert or Split Measure.

IV MOVING NOTES AND CHORDS

Once entered into a score, notes and chords are still completely flexible. To move notes up or down the scale, click the note you want to move with the arrow pointer, then drag up or down while continuing to hold the mouse button down. *DMCS* plays the note as it moves up or down the scale so you can pick the sound you want. When the note sounds as you want it, release the mouse button and the note is dropped into the new location on the staff.

Deluxe Music Construction Set also lets you move notes and chords horizontally in the same manner — just click them with the arrow and slide them sideways. Use this feature to reposition notes and rests so that symbols don't obscure each other in complex music with crowded staffs, or to change the order of the notes. In addition, you can make a copy of the note or chord by pressing the Alt key as you click and drag.

V RESIZING MEASURES

If you need more room in a measure, you can click and drag the bar lines that separate measures and slide them to the right. To return a measure to its original size and note spacing, identify the measure with the insertion point or a note selection and choose ReAlign Measure from the Measures menu.

VI LOADING, REMOVING, AND CHANGING INSTRUMENTS

Each *DMCS* song automatically loads the musical instruments called for in the score. (This is not true for songs imported from other applications, however. See Appendix B: Using Instant Music.) For instance, pull down the Sounds menu and you'll see that the Accordion instrument was loaded with Passacaglia. If the song used other instruments, they would have been loaded as well. And even if you used only one instrument in the orginal composition, you can always add more instruments later.

To add another instrument to Passacaglia, pull down the Sounds menu and select Load Instrument. A requester now appears, showing you all of the instruments in the instruments drawer on that disk. Click on AhhVoice, and the name "AhhVoice" appears in the File bar. Click on OK and then pull down the Sounds menu and take a look. The AhhVoice has been added beneath Accordion, and is highlighted so you can use it immediately. Although the instrument is selected for use, it won't be used in the song until you select Set Instrument from the Measures menu.

Click in the first measure of the top staff with the arrow pointer. Now choose Set Instrument from the Measures menu. The top staff should now show AhhVoice as its instrument, while the bottom staff should still be labelled with "accordion." Now play the song and listen to the change.

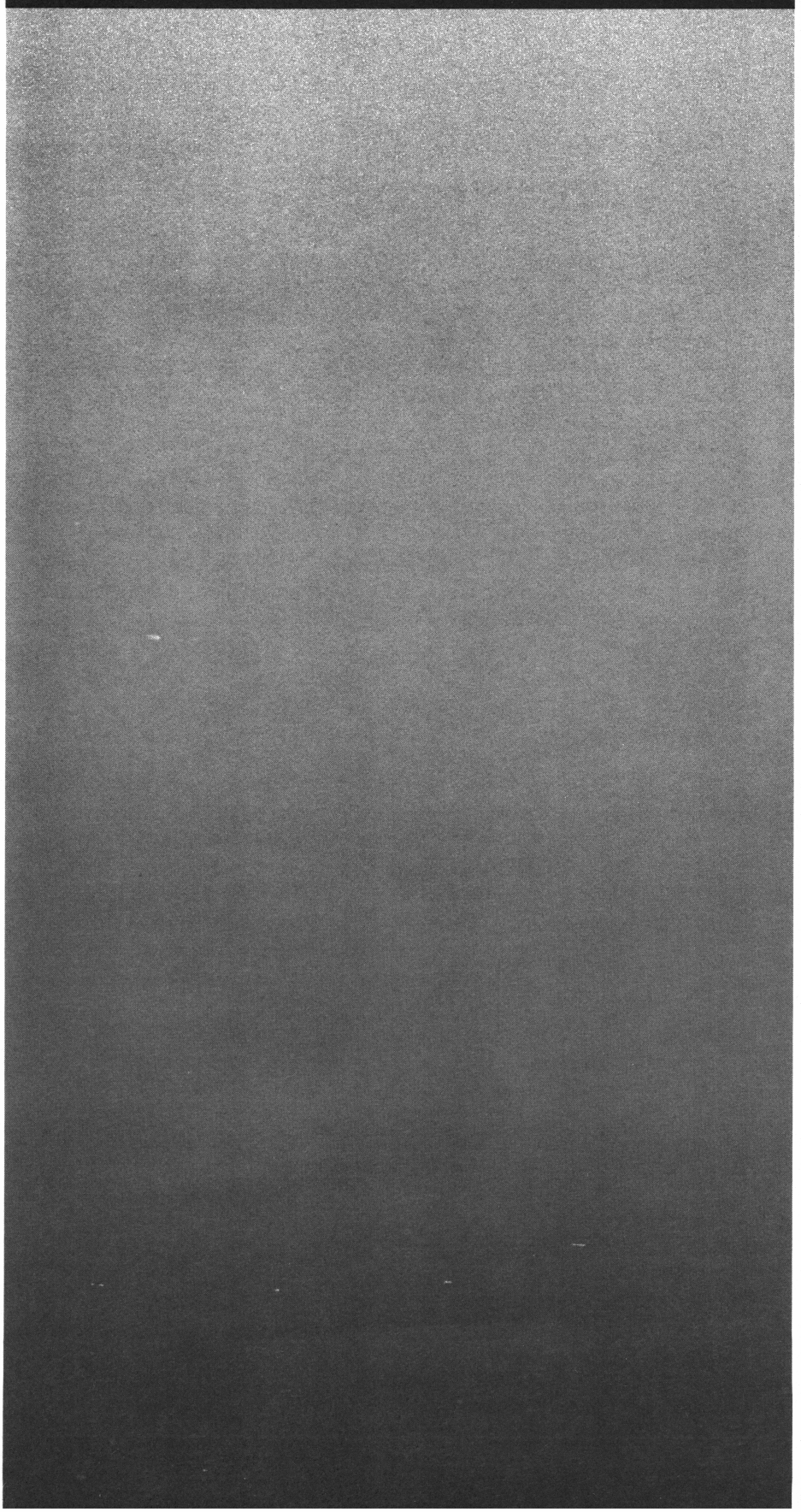
♪ *You can remove the AhhVoice by selecting it (so it is highlighted), then choosing Remove Instrument from the Sounds menu. When the AhhVoice has been removed, DMCS replaces it with a generic instrument called "Voice2." Change the top staff instrument back to Accordion with the Set Instrument command.*

VII SAVING ARRANGEMENTS

When you have your arrangement just the way you want it, you can save it to disk using either the Save or the Save As commands from the File menu. The Save command saves the score using its current file name, thus replacing the old version with the latest changes to the score. The Save As command allows you to rename the score before saving, thus preserving the old version and saving the changes in a new file. *Do not* save the version of Passacaglia you've been using with the Save command. If you've made changes you want to keep, use the Save As command and rename your work. To exit a specific score, simply load another one or select Quit from the File menu. If you haven't saved the present score, you will be asked to do so before completing the operation.

This first chapter was designed to whet your appetite by giving you a taste of the possibilities available with *DMCS*. The next chapter, "Deluxe Music Construction Set Tutorials" contains step-by-step examples detailing *DMCS*'s advanced features.

NOTES



NOTES

This chapter contains tutorials designed to help the beginner understand and master all of Deluxe Music Construction Set's advanced features. If you're already familiar with DMCS, you probably won't need to read through the tutorials. The tutorials are arranged in the order you'd most likely need them as you use DMCS. Thus, "Setting Playback Options" is the first tutorial because that's the task you are most likely to perform when you first start DMCS. Each tutorial is arranged by a major subject heading, then broken into smaller tutorials that detail the various options within the major subject. For instance, within the "Setting Playback Options" tutorial, are shorter sections on: "Playing Through a Stereo or Amplifier," "Choosing Visual Feedback," "Changing Speed and Staff Sound," "Defining Sections," and "Using Repeat Play." The six tutorial areas are listed below.

I. Setting Playback Options
II. Loading and Changing Instruments
III. Setting Up the Score
IV. Entering and Modifying Music
V. Adding Lyrics
VI. Printing

I SETTING PLAYBACK OPTIONS

Deluxe Music Construction Set offers a number of options that affect the playback of your music. For instance, using the Play menu, you can select the type of visual feedback that *DMCS* provides during playback. The Play menu also lets you define a specific section of the song to play, replay the music in a continuous loop. You can also change the tempo and turn the sound on or off for selected staffs with the Score Setup window. The following sections show how to alter these playback functions, but first, open the sample score entitled *Cleopha* on the *DMCS* Music disk. You'll work on this score as you progress through the tutorials.

PLAYING THROUGH A STEREO OR AMPLIFIER

If your computer is connected to a stereo system or music amplifier, adjust the volume control in the Score Setup window to optimize *DMCS*'s sound. A low volume setting (2 or lower) improves your ability to smoothly control overall volume through your stereo or amplifier. Use the tone controls on your stereo or amplifier to improve the tone of certain instruments and to compensate for your listening environment.

In addition to adjusting the volume and tone of the music, you can also select the type of visual feedback that *DMCS* provides as it plays.

CHOOSING VISUAL FEEDBACK

DMCS provides up to three forms of visual feedback while music plays: a measure count at the bottom of each measure, flashing notes in the Score window, and a player piano in the Piano Keyboard window. The measure count is an automatic feature that's always on, but flashing notes and player piano can be turned off or on. (Flash Notes is the default setting.)

The Flash Notes option does just what it says; it flashes the music as it scrolls, showing the pitch and duration for each note as it is played. To use Flash Notes:

1. Pull down the Play menu.
2. If Flash Notes is white, the option is turned off. Select the Flash Notes option to turn it on and it changes to red.
3. Now play *Cleopha* and watch what happens. The note heads flash as the music plays.
4. Press the Space Bar to stop the scrolling Score window in the measure shown on the measure counter. Note that the last note played is selected red.
5. Select Flash Notes again to turn the option off.

If the Play Section option (see "Defining Sections, Using Repeat Play" below) is used with Flash Notes, the music flashes and scrolls only for the selected section.

Player Piano "plays" the onscreen piano keys as *DMCS* plays the notes in the score. Turn Player Piano on and off the same way as Flash Notes. Be sure to bring the Piano Keyboard window to the top before using this option (that is, use the Piano Keyboard command in the Window menu, or shrink the Score window if it's covering the keyboard), otherwise you won't be able to see keys as they're played.

You can use Flash Notes and Player Piano together to see which piano keys go with which notes, but slow the music down first so you can see what's happening (see "Changing Speed and Staff Sound" below).

♪ *Using the Player Piano and Flash Notes options together during large songs or songs with many short notes may cause the music to sound like it is "dragging" during playback.*

In this section, you've learned how to choose the type of visual feedback that *Deluxe Music Construction Set* provides during playback. In the next section you'll see how to play a single section of a song, and how to playback the music in a continuous loop.

DEFINING SECTIONS AND USING REPEAT PLAY

In addition to playing the entire song, *DMCS* also lets you define a specific section of the score for playback. When you play a section of music, each note in the section flashes as it is played. You can also use Repeat Play to play the defined section repeatedly. This is useful when trying to find problems in very short or complex pieces of music. Use the following procedure to define a section of music in *Cleopha* and play it repeatedly.

1. Use the arrow from the Note Palette to click the insertion point into the first measure of the score. This will be the beginning of your section.
2. Now choose Begin Section from the Play menu. Notice that an international open quote (<<) appears above the measure to mark it as the beginning of the section.
3. Click the insertion point into the third measure of the score and choose End Section from the Play menu. An international close quote (>>) appears above the measure, marking it as the end of the section.

4. Choose Repeat Play from the Play menu, then choose Play Section from the same menu. The section you defined now plays repeatedly until you select Stop Play from the Play menu.

You can also define a section by first selecting the music you want with the arrow, and then using the Begin and End Section commands from the Play menu. The selected music flashes, and the Begin and End Section marks (<< >>) show the measures that begin and end the selected passage.

Repeat Play works with Play Song as well as Play Section. Using Repeat Play while playing the entire song is particularly interesting when using *DMCS* with a MIDI synthesizer. For instance, you can create a three-track rhythm with *DMCS*, select Repeat Play, and *DMCS* acts as the rhythm section while you jam with a fourth track on the synthesizer.

When you are working with a full composition, you might also find it useful to leave the Score Setup window open, expanding and shrinking it as the case may be. You can then further isolate a specific passage of music by turning the sound off for all the staffs except one or two (see "Changing Speed and Staff Sound" below).

Now that you've seen how to play or repeatedly play a portion of the score, let's move on and see what options you have available to make *Deluxe Music Construction Set* sound even better.

CHANGING SPEED AND STAFF SOUND

You control a song's tempo (the speed at which it plays, measured in beats per minute) with the Beats per Min control (Beats per Minute is the second control from the top on the left) in the Score Setup window. Slide the Beats Per Min control to the right to speed the music up or to the left to slow it down. You can also change the tempo for a selected passage within a song. Let's try some experiments with the tempo of *Cleopha*.

1. If the Score Setup window isn't currently open on your display, select it from the Window menu.
2. Notice that the current tempo for *Cleopha* is 133 beats per minute. Play the song briefly to get a feel for the tempo.

3. Now set the Beats Per Min control to 103 beats per minute and play the song. *Cleopha* now plays at a noticeably slower rate. Let's try two tempos within the same song.
4. Click the insertion point into the first measure and choose Set Tempo from the Measures window. The tempo now appears above the first measure as shown in Figure 2.1.

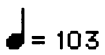


Figure 2.1: The Score's Tempo

5. Click the insertion point in the third measure, and in the Score Setup window, set the Beats Per Min control back to 133 beats per minute.
6. Choose Set Tempo from the Measures menu and play the song. *Cleopha* now starts off slowly, and at the third measure takes off at 133 beats per minute.

You've now learned how to assign differing tempos to individual measures within your song. This is often essential for adding depth and texture to your music. Many times though, you'll encounter problems in your score that are hard to pinpoint with all portions of the score active. For this reason, *DMCS* lets you turn the sound off for specific staffs. Here's how:

1. Click the right arrow on the Staff Number control in the center of the Score Setup window. The staff number changes from 1 to 2 to show that you have selected staff 2 to work with (the top staff is number 1, the next is number 2, and so on).
2. Click the Staff Sound On button to deactivate it. The red highlighting will turn off.
3. Play the song and listen to the difference. Experiment now by turning staff 2 back on (click the Staff Sound On button), and staff 1 off.

Turning the sound off for particular staffs can also help sharpen your ear and musical understanding. First try listening to a staff by itself, watching its pattern flash as it plays. Next try to identify each note in that staff as you play it with other staffs.

In this section, you've learned about all the tools that *Deluxe Music Construction Set* provides to help make your music sound better. Now let's move on and find out how you can make your music sound totally different simply by varying the instruments you use in the song.

LOADING AND CHANGING INSTRUMENTS

Deluxe Music Construction Set has a large variety of musical instruments, or "voices," that you can use in your songs. You can assign different instruments to entire staffs or individual measures within your score. You add and delete instruments in *DMCS* from the Sounds menu. The Load Instrument command adds an instrument to the bottom of the instruments listed in the Sounds menu. Remove Instrument removes the currently selected instrument from the Sounds menu. The number of instruments that you can load is limited by the amount of memory your computer has. Use the following procedure to load and change the instruments used in *Cleopha*:

1. Pull down the Sounds menu and notice that *Cleopha* uses only one "instrument": Accordion. Choose Load Instrument to add more instruments to the menu.
2. Click on the ElecPiano instrument when the Load This Instrument requester appears, and then click OK to load the instrument.
3. Pull down the Sounds menu and you'll see that the instrument has been added and is selected for use by being highlighted in red.
4. Click the insertion point in the first staff and measure of *Cleopha*.
5. Choose Set Instrument from the Measures menu to assign the ElecPiano to the first staff of *Cleopha*, and *DMCS* automatically assigns the original instrument (Accordion) to the second staff.
6. Now play *Cleopha* and listen to the difference changing the instruments makes. Continue with the next exercise to see how to add more instruments to the score.

USING MULTIPLE INSTRUMENTS

Right now *Cleopha* uses two instruments: Accordion and ElecPiano. But you can use even more instruments by assigning different instruments to individual measures within a staff. You can change instruments at any staff or measure in the score using the procedure shown in the following example:

1. Pull down the Sounds menu, select Load Instrument. When the Load This Instrument requester box appears, click on AhhVoice, and then OK when it appears in the File bar. AhhVoice is automatically selected for use when you load it.
2. Click the insertion point into the sixth measure of the first staff.

3. Choose Set Instrument from the Measures menu and the AhhVoice instrument is assigned to the sixth measure of the first staff, while measures one through five stay the same.
4. Your song is now using three different instruments two of which are on the same staff! Now play *Cleopha* and listen to the effect.

The last instrument assigned is always in effect until you replace it or assign another new instrument in following measures. To remove instrument names before you print, click Hide Instruments in the Score Setup window for each staff selected with the Choose Staff Number control. Now let's take a look at a quick way to revert *Cleopha* back to a single instrument song.

USING ONE INSTRUMENT

To change *Cleopha* back to a single instrument score, use Remove Instrument in the Sounds menu to remove all but Accordion from the menu. When only Accordion remains, *DMCS* automatically uses that instrument for all the staffs when the song or section is played, even though a staff may show the generic instrument "Voice #."

When the Sounds menu contains only one instrument, changing instruments for the entire song is simply a matter of choosing Remove Instrument to remove the last one, and Load Instrument to add a new one. This is a good way to quickly get a feel for how well different instruments work in your songs. Let's try loading a new instrument now:

1. Use Set Instrument to set both staffs to Accordion.
2. Use Remove Instrument to take Accordion out of the Sounds menu. The instrument name for both staffs now changes to "Voice#." The number shown after the generic voice depends upon how many instruments have been loaded before it.
3. Now use Load Instrument to load the ElecBass instrument. The instrument name for each staff changes again when the instrument is loaded.
4. Play *Cleopha* and listen to the change.
5. Experiment with the music by loading different instruments and playing the song. When you are ready to move on, reload the Accordion instrument and continue reading.

In addition to the above method, there's another way to try out different instruments in a song. Load several instruments into the Sounds menu and select at least one note in the first measure of each staff (drag a selection box around the notes or shift-click each one). Then select the instrument you want to try, and use Set Instrument.

If you only want to hear the instrument change for part of a song, define that part as a section and select notes at the beginning of the section. Turn on Repeat Play and choose Play Section from the Play menu. The music loops endlessly and you can select new instruments during the playback. Each instrument change you make takes effect the next time the section cycles through its beginning.

Now that you've seen how using different instruments can affect the impact of your music, let's take a look at how you can refine your songs further by using different play styles for the instruments.

CHANGING PLAY STYLES

Play styles are like piano pedals or synthesizer controls: the instrument can sound clipped (staccato), smooth (legato) and many other variations. Use the following procedure to add or change a play style:

1. Select the arrow from the Note Palette, and click the dotted quarter rest in the first measure of the first staff.
2. Use the horizontal scroll bar to move to the fifth measure.
3. Hold down the Shift key, and click the last quarter note in the fifth measure of the second staff. All the notes between the dotted quarter rest and the last quarter note should now be highlighted in red.
4. Choose Set Play Style from the Notes menu, and click style number 5, "fast vibrato" from the requester.
5. Click OK in the Play Styles requester. Notice that now the number "5" appears below each of the selected notes in the Score window to indicate the play style you've selected. Select Play Song from the Play menu and play the song. Now the sound for the first five measures wavers, then changes to normal at the sixth measure.
6. With the notes in the first five measure still selected, press the right Amiga key and Y to call up the Play Styles requester again.

7. Select play style number 7, "fast tremolo," and play the song. Now the first five measures sound completely different.

Go ahead and experiment with the different play styles for Accordion. You may also want to load in different instruments and alter their play styles as well. When you are ready to move on, set the Accordion play style back to normal and continue reading.

The play style number appears above each note affected (or below it, for the second track in two-track scores like *Cleopha*). Changing instruments for a passage after setting its play style changes the passage to the corresponding play style for the new instrument.

To hide the play style numbers at print time, click the Show Play Styles to toggle it off in the Score Setup window. There is one exception to this rule. When Show Play Styles is turned off, dots appear above (or below) notes marked for staccato playback. This is standard staccato notation for printed music. (Legato works the same way, but with a *line* above or below the note.)

To hear a play style before using it in the score, select Keyboard Play Style from the Sounds menu and assign the style to the keyboard. Then click the piano keys to hear the play style but make sure the Insert Notes option in the Piano Keyboard window is turned off or you will insert unwanted notes in the Score window.

If you feel like experimenting further to see how play styles add personality to music, study the play style assignments in the sample music that came with *Deluxe Music Construction Set*. Use the Show Play Styles button in the Score Setup window to display play styles and scroll through the score looking for play style changes. Change the play style for different passages and listen to the difference it makes in the way the song sounds and feels.

By now you're probably starting to realize that *DMCS* gives you full flexibility in the way you view and play your music. But *DMCS* also lets you set up and change the very framework of your musical scores by giving you full control over parameters such as key and time signatures, staffs and clefs, and working space and score width. The following sections describe these functions.

SETTING UP THE SCORE

Deluxe Music Construction Set lets you add or delete entire staffs of music from your score at any point. It also provides you with the commands you need to tailor your onscreen workspace, and the score width for printing purposes. You can also change the key signature (the key the song is written in) and the time signature (which determines the number of beats per measure, and which note gets one beat), at any point in a score. By musical convention, if the key or time signature isn't written in the first measure, the key is C and the time signature is 4/4.

CHANGING THE TIME AND KEY SIGNATURE

You can change the time or key signature in any measure on any staff. The time setting affects all staffs, while the key signature setting affects only the staff containing the insertion point. The new settings stay in effect until you change them again at a later measure. Use the following procedure to change the time and key signature in *Cleopha*:

1. Select the arrow from the Note Palette and click the insertion point in the first measure of the first staff.
2. Pull down the Measures menu and choose Set Time Signature.
3. When the Set Time Signature requester appears (see Figure 2.2), click the "1" gadget beneath "Beats Per Bar." This tells *DMCS* that your score contains 1 beat per measure. The numbers on the bottom row designate the notes that get 1 beat; leave it set at "4." (For example, 4/4 time means, "4 beats per measure, the quarter note gets one beat").

♪ *If you want to use a really offbeat time signature (such as 9/4), click the Other scrollbar where, using the arrows, you can select any whole whole number from 7 to 99 as the "Beats Per Bar" value.*

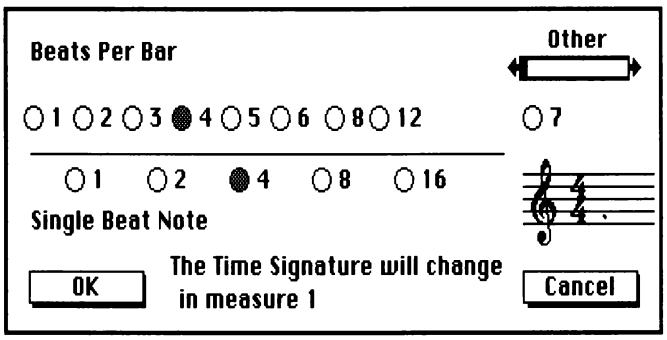


Figure 2.2: The Set Time Signature Requester Box

4. When you select options within the requester, the staff representation reflects your changes while the line at the bottom identifies the measure where the change begins. Click OK to confirm the time change. Notice that both staffs in the score window are now marked with 1/4 time. This means there will be one beat per measure with the quarter note receiving one beat.
5. Now change the key signature by selecting Set Key Signature from the Measures menu.
6. When the Set Key Signature requester appears (see Figure 2.3), notice that the key is currently set for the octave from from C major to A minor. This is DMCS' default setting. The Set Key Signature requester provides three ways to deal with changing the key of music that has already been entered:

   "Don't Transpose" leaves the notes exactly as they are and uses sharps, flats, or naturals as necessary to keep the melody the same.

   "Transpose Up" and "Transpose Down" move the music respectively up or down so it's written in the scale of the new key, letting the sharps or flats in the key signature keep the melody the same.

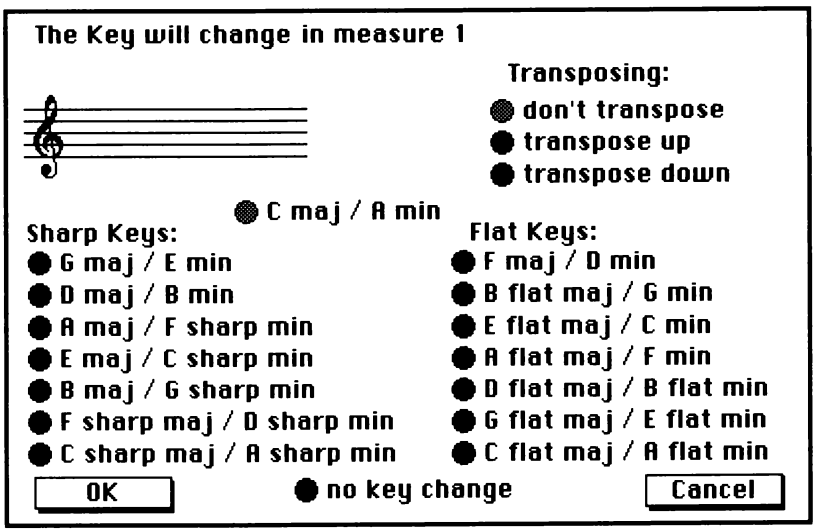


Figure 2.3: The Set Key Signature Requester Box

1. You write the key signature into the score as a group of sharps or flats. The Set Key Signature requester places C at the top-center because it's written with no sharps or flats. The other key signatures are listed below in two columns, sharps on the left, flats on the right. Each key signature uses one more sharp or flat than the previous one in its column. The "no key change" option lets you change the transposition style without changing the key signature.
2. Change the key signature of your new score to D major by clicking the "D maj/B min" radio button in the Sharp Keys column. Notice that the change is displayed on the sample staff while the line above indicates the measure where the change begins.
3. Click OK to confirm your choices and the score window reflects the key signature change. Now play *Cleopha* to see how you did.

As you can hear, changing the time and key signatures makes *Cleopha* sound like an entirely different song. Now use the same procedure to change *Cleopha*'s time signature back to 2/4, and the key signature back to F major/D minor (in the Flat Keys column of the Set Key Signature requester). Now that you know how to change a score's time and key signatures, let's find out how to add and remove staffs and clefs.

ADDING/REMOVING STAFFS AND CLEFS

You can use up to eight staffs in a song, but remember that the program can play only four notes at a time during playback (unless you are controlling a MIDI syntheizer that can play more than 4 channels). Use Flash Notes (see "I. Setting Playback Options" above) to see the notes *DMCS* plays when it encounters more than four notes in the same vertical position. To add and delete staffs, and change staff clefs in *Cleopha*, use the following procedure:

1. Pull down the Windows menu and select Score Setup if it's not already open.
2. Notice the six controls in the lower left corner of the Score Setup window (see Figure 2.4). The "Add Staff" button inserts a staff at the end of the score and the "Delete Staff" button deletes the last staff of the score. The four radio buttons change the staff clef .

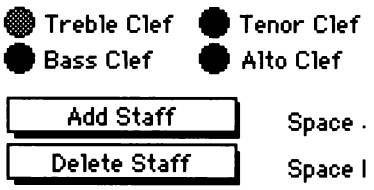


Figure 2.4: Staff Controls in the Score Setup Window

3. Click the "Add Staff" button to add a staff to *Cleopha*. The new staff appears instantly as the last staff of the score. *DMCS* always inserts new staffs as treble clef.
4. To change the clef of the new staff, set the Choose Staff Number control in the Score Setup window for staff number 3.
5. Click the "Bass Clef" radio button directly above the "Add Staff" button to change the clef for the third staff. You can also change a staff's clef by clicking the insertion point in the staff you want to change, then selecting Set Clef from the Measures menu.

♪ *If you change clefs after entering notes, DMCS transposes the music to fit the new clef. The notes, however, remain unchanged.*

6. To delete the new staff from the score, click the "Delete Staff" button in the Score Setup window. Deluxe Music Construction Set warns you that all the music on staff 3 will be erased.
7. Click OK to confirm your action and the third staff is removed from Cleopha.

Knowing how to add or delete staffs, and change clefs is essential, especially when you are creating a new score from scratch. But as you add more staffs, your music often becomes more complex and harder to follow onscreen. For this reason *DMCS* provides commands and functions that let you tailor your computer's display to fit your own working style. Let's see how.

CHANGING YOUR WORKING SPACE

Deluxe Music Construction Set gives you complete flexibility in the way you format your musical scores. Using controls found in the Score Setup window you can specify the amount of white space above and below specific staffs and how many measures are displayed in the Score window. Use the following procedure to change the working space within *Cleopha*:

1. Open the Score Setup window if it's not already open.
2. Use the Choose Staff Number control to identify staff number 2 as the staff you want to work on.
3. Notice the Space Above Staff control (see Figure 2.5) in the lower right corner of the Score Setup window. To the right of the control is the number 12. This is the number of pixels that make up the white space between staffs 1 and 2. 12 pixels is DMCS' default setting. Click the right scroll arrow of the control to increase the white space to 40 pixels. You should see the white space above staff 2 increase with the pixel count.

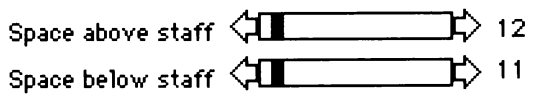


Figure 2.5: The Space Above and Below Controls

4. Now use the Space Below Staff control to increase the white space below staff 2 to 40 pixels as well.

The Bars Per Line control, at the top-center of the Score Setup window, lets you determine how many measures are visible on the screen at once. This setting also determines how many measures are printed per line when you print. Try it now by increasing the bars per line to 10 and you'll see that the measures in your score become narrower.

Remember that you can also shrink or stretch the horizontal space in any measure by using the arrow to grab and slide the bar that separates measures. Slide the bar to the left to shrink a measure, or to the right to stretch a measure.

Choose the number of measures that keeps your score from looking cluttered. If you're entering a song with a structure that favors copying and pasting material several measures at a time, leave the Score Setup window open and use the Bars Per Line control to contract and expand the measures.

For example, select several measures for copying by shrinking the measure with the Bars Per Line control so you can drag around all the measures at once. Then change the setting back to 2 or 3 bars per line so you can work on individual measures.

♪ *Changing Bars Per Line changes the way text lines up within and between measures. If you've entered lyrics or notes in your score, be sure to use a Bars Per Line setting that displays text correctly before you print.*

Now that you've learned to control the way your music is displayed onscreen, let's take a look at the way you control your music's appearance when printed.

CHANGING SCORE WIDTH FOR PRINTING

When you're ready to print your score, click the Printer Width button in the Score Setup window (see Figure 2.6). Clicking this option stretches the measures in your score to take advantage of the extra width available on paper. When you click the Printer Width button, you'll see the measures change width onscreen as well. Remember, if you plan to enter lyrics or other text, you should first set the score to Printer Width because changes in measure width have no effect on text.

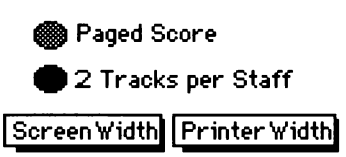


Figure 2.6: Score Width Controls

If you want to see exactly what the printed score looks like onscreen, select the Paged Score option (shown highlighted in Figure 2.6) and use the scroll bars to move around. Use Print Score from the File menu to actually print the score. (See the "Printing" section below for more information on printing your music.)

Now that you've learned all about *DMCS*' formatting features, let's move on to the next section and learn about the process of actually entering and editing music.

IV ENTERING AND MODIFYING MUSIC

In the following sections we'll look at the various ways you can enter and modify music in *DMCS*. But before we get into the actual mechanics of entering and editing music, let's take a look at the way *DMCS* processes what you enter.

NOTE POSITIONING

Each note and rest in the Note Palette equals twice as many beats as the note or rest directly below it. Thus, the whole note (at the top of the Note Palette) equals two half notes, the half note equals two quarter notes, and so on.

When you enter a note in the score, *DMCS* places it according to the number of beats it represents. For example, in a 4/4 measure (4 beats per measure with the quarter note getting 1 beat), *DMCS* places a quarter note so that about 1/4 of the measure separates it from the next note or bar line, or places a half note so that about half the space in the measure separates it from its neighbor, and so forth The following example illustrates how *DMCS* positions notes.

1. Choose New Score from the File menu and click "No" when *DMCS* asks if you want to save the changes to *Cleopha*.
2. The new score should appear with 4/4 time signature. Select the quarter note from the Note Palette (the third note from the top on the right).
3. Enter four notes in the first measure of the score. Notice that four quarter notes fit perfectly in one measure.
4. Now change the time signature to 4/8 (each quarter note stands for 2 beats), and two of the quarter notes become phantom notes. This tells you that there isn't room in the measure for four quarter notes, and that *DMCS* will ignore two notes during playback.
5. Finally, change the time signature to 4/2 (each quarter note gets only half a beat), and suddenly you have room in the measure for four additional quarter notes (a total of eight quarter notes). If you enter new notes between the existing four, the old notes move to make room for the new.

Place a note directly above or below a note or notes with the same number of beats and *DMCS* joins the note stems to form a chord. If Two Tracks Per Staff is selected in the Score Setup window, notes with different beats can be entered at the same vertical position in a staff. (See "Entering 2 Tracks per Staff" below for more information.)

DMCS automatically points note or chord stems up when they're entered below the middle of the staff and points them down when they're entered above the middle of the staff. You can manually change note stem direction by selecting the notes with the arrow, then selecting Flip Note Stems from the Notes menu. (See "Entering 2 Tracks per Staff" below for information about how you handle note stems when you use 2 Tracks per Staff).

Now that we've seen how *DMCS* positions notes within a score, let's continue and learn about *DMCS'* basic note entry and editing functions.

BASIC NOTE ENTRY AND EDITING

Entering notes in a *DMCS* score is simply a matter of clicking the note, rest, modifier, or tool you want to use in the Note Palette, then clicking the score to "drop" it on the staff. The cursor assumes the shape of the Note Palette item to remind you of what you selected. Use the following procedure to "preview" a note after you drop it in the score:

1. Using the new score you opened in the last exercise, select the quarter note from the Note Palette.
2. Click the note into the first measure of the first staff.
3. After you drop the note, click and hold the mouse button on it to play.
4. Continue to hold down the mouse button and slide the note up or down.

The note plays as you move it up or down the scale. Let go of the button to drop the note on the staff when it sounds just right. If the Piano Keyboard window is open, the corresponding keys flash as you slide the note up and down. (See "Using the Piano Keyboard" below for more information on entering music with the Piano Keyboard.) In addition to changing the note's pitch, you can also change the note duration with the following method:

1. Select the 32nd note (the last note) from the Note Palette.
2. Click the note into the first measure of the first staff, but continue to hold down the mouse button.
3. While holding the button, slowly drag the mouse horizontally to the right.

The onscreen cursor now cycles through the various note durations as you drag. *DMCS'* other editing features are listed below:

1. You can move notes after you've entered them by using the Up Half Step and Down Half Step commands from the Notes menu.
2. You can erase notes by selecting them and pressing Delete (or use the Note Palette eraser).
3. You can undo an Erase or Cut by selecting Undo from the Edit menu.
4. You can remove a note from a chord by placing it on top of another note in the chord.
5. The Edit, Notes, and Groups menus all contain commands that affect the selected music in various ways.
6. Half Time and Double Time in the Notes menu are especially useful for changing the duration of notes after they've been entered.

Now that you've learned about *DMCS'* music editing capabilities, let's move on and learn about how to enter notes using the Piano Keyboard.

USING THE PIANO KEYBOARD

In addition to providing visual feedback during playback, you can use the Piano Keyboard to enter notes directly into the score. To use the piano keyboard to insert notes into the score, follow this procedure:

1. Open the Piano Keyboard, or bring it to the top, with the Piano Keyboard command from the Window menu.
2. Click the "Insert notes in score" radio button on the lower left of the keyboard.
3. Use the Note Palette arrow to click the insertion point in the second measure.
4. Click a Piano Keyboard key to insert the corresponding note into the score.

The duration of the note (half note, quarter note, and so forth) is determined by the selection in the Note Palette. To enter a rest of that same duration, click the "Insert Rest" button on the Piano Keyboard. To enter chords (that is, multiple notes in the same vertical position), click on the Chords radio button. When entering Chords, click the Advance button to move the insertion point to the next available position.

You can also change note value while entering notes with the Piano Keyboard by using this computer keyboard shortcut: type 1 to select the whole note from the Note Palette, type 2 to select the half note, and so on.

You may want to use the Piano Keyboard to pick out a tune on the keys without worrying about the duration of the notes at first. Then when you play the music back, stop and change note values until it sounds the way you want.

Now that we've taken a look at the various ways to enter and modify notes in a score, let's take a look at how you can use two tracks per staff.

ENTERING 2 TRACKS PER STAFF

Some written music, piano music in particular, contains notes of different beat values that are written directly above and below each other in the same staff. The result is separate rhythmic tracks, each with the correct number of beats for the time signature, in one staff.

DMCS allows up to two tracks of music in each staff of the score if you click on the "Two Tracks Per Staff" button in the Score Setup window. When using Two Tracks Per Staff, the Change Tracks control in the middle of the Note Palette lets you switch between the two tracks while entering notes. Notes entered in track one have their note stems pointing up, while track two notes have note stems that point down.

To select notes in a single track, click on one note to select it, then click on another while holding down the Shift key. Let's try the process:

1. Select Open Score from the File menu and click "No" when DMCS asks if you want to save your score.
2. Select the Cleopha score when the requester appears.
3. Use the horizontal scroll bar to bring measure 10 into view.
4. Select the first quarter note chord (with the note stems pointing up) in measure 10 of the top staff by clicking it.
5. Hold down the Shift key, and click the second quarter note chord near the end of the measure.

Normally, in a single-track staff, everything between the two selected chords would also be selected. But in this case, the eighth note chord near the middle of the measure wasn't selected because it's on track two.

Once you've selected notes in a track, you can use Cut, Paste and Copy in the Edit menu and all of the commands in the Notes menu, and only the notes in the selected track are affected. However, when you paste a track into a staff, the track it is pasted into depends on the setting of the Change Tracks control in the Note palette.

You can select notes in both tracks at the same time by dragging a selection box around the notes, or by Shift-clicking on notes from each track. For instance:

1. Click on a white space in the score to deselect the chords from the last exercise.

2. Click on the first chord (with the note stems up) in measure 10 again.
3. Now hold down the Shift key, and click on the last chord in the measure (with the note stems down).

Now all the chords in the measure are selected because you first selected a chord in track one, then Shift-clicked on a chord in track two.

The ability to slide notes horizontally and rests vertically is also useful when working with two-track music. Printed music is subtle. You often need to move a rest so it doesn't hide a note in another track or move a half note off of a quarter note so a musician can read the music correctly. If you only want to move the notes temporarily (in order to edit a note beneath another note), choose Realign Measure from the Measures menu when you're through editing.

In this section you've learned how to use *DMCS'* two tracks per staff feature, now let's find out what you can do if you happen to use too many notes in a measure.

TOO MANY OR TOO FEW NOTES IN A MEASURE

If you push a measure's beat total over the limit set by the time signature by entering too many notes, the extra notes will dim and won't be played. Although you can erase dimmed notes as you would normal ones, *DMCS* provides tools that allow you to split measures and preserve your note entries.

On the other hand, if you use too few notes, and the beats don't amount to the total the time signature calls for, *DMCS* plays a rest (makes no sound) for the missing beats at the end of the measure during playback. To solve this problem, *DMCS* lets you consolidate measures.

Here's what to do if a note duration change, or moving notes, results in too many beats in a measure:

1. Still using Cleopha, select the quarter note from the Note Palette.
2. Click a quarter note into the middle of the first measure of staff one. The extra note will cause some notes to dim.

3. Press Enter to select the arrow from the Note Palette, and click the insertion point just before the dimmed notes.
4. Now choose Split Measure from the Measure menu to insert a measure boundary line (a "bar line") at that point. The dimmed notes are then separated into their own measure.

If a measure doesn't contain enough beats, select some notes in the measure and in a neighboring measure as well. Next choose Join Measure from the Measures menu to make the two measures one.

If you drag a note horizontally without crossing over other notes, the note stays where you drop it. You can use this feature to fine tune the score's appearance before printing. But if you drag a note past existing notes, *DMCS* realigns the notes within the measure accordingly. If you drag a note into a new measure, *DMCS* may dim notes if the extra notes exceed the time signature limit for the measure. Now let's continue and explore the powers of using Cut, Copy, and Paste.

USING CUT, COPY, AND PASTE

Music often uses repeated patterns; because of this, you'll find the Cut, Paste and Copy commands in the Edit menu useful tools for quickly replicating repetitive portions of songs. Let's give these editing features a try now with *Cleopha*.

1. Start by closing the modified version of *Cleopha* and reopening the unmodified version on disk.
2. Click the first note (in this case a rest) in the first measure of staff one, then scroll to measure 5. Shift-click on the last note of measure 5 in staff one. All the notes in the first five measures of the first staff should now be chosen.
3. Select Copy from the Edit menu. A copy of the selected notes appears on the computer's "clipboard."
4. Now call up the Score Setup window, and click the Add Staff button. When the third staff appears, select the arrow from the Note Palette and click the insertion point into the last staff.

5. Select Paste from the Edit menu, and a *copy* of the notes you selected earlier are dropped onto the staff. Now you can experiment with the notes on the third staff by first selecting them, and then raising and lowering them by half steps or octaves with the commands in the Groups menu. Play the song to see how you've done.
6. When you are ready to move on, reselect the notes in the first five measures of the top staff.
7. Choose Cut from the Edit menu. Now you see the difference between Copy and Cut. Copy merely puts a *copy* of the selection on the Clipboard, while Cut actually *removes* the selection to the Clipboard. Play *Cleopha* now to see what interesting effect you've created.
8. Choose the arrow from the Note Palette, and click the insertion point into the beginning of measure one in the top staff.
9. Choose Paste from the Edit menu, and the missing notes reappear.

Now that you've seen how to use the Clipboard, let's continue and see how to use accidentals in *DMCS*.

ACCIDENTALS (SHARPS, FLATS, NATURALS)

Pitch modifiers are called "accidentals" and are located on the right side of the Note Palette just below the I-beam text insertion tool. Sharps mean "play this note a half step higher" and flats mean "play it a half step lower". Naturals cancel the effect of sharps and flats.

A couple of ways to apply sharps or flats in your music follow:

1. Select a group of notes, and choose Up Half Step or Down Half Step in the Notes menu. (The program inserts only sharps and naturals if the key signature contains sharps, and only flats and naturals if the key signature contains flats).
2. Select individual notes, and apply the accidental directly, as described below

To apply an accidental directly — regardless of the key signature and of whether the note is selected — use the following procedure:

1. With Cleopha still open, select the flat symbol (directly below the I-beam tool) in the Note Palette.

2. Next click the single eighth note in the first measure of the first staff. The flat symbol should now appear to the right of the note.
3. Change the flat to a sharp by selecting the sharp symbol (third below the I-beam) in the Note Palette, and clicking the note again.
4. Cancel out the accidental symbol by selecting the natural symbol (second below the I-beam) from the Note Palette and clicking the note one more time.

You can enter accidental notes into the score by selecting the accidental symbol you want to use along with the note value in the Note Palette. Just click the note you want to use, then click the accidental symbol, and begin entering notes. To deselect an accidental in the Note Palette click on Mod Clr (to clear the modifiers).

Accidentals that are part of the key signature automatically affect all notes written in the key signature. Accidentals that aren't part of the key signature only affect the rest of the measure in which they occur.

Double sharps and flats are not supported. If you try to add an accidental to a space or line that already contains that accidental in the key signature or earlier in the measure, nothing happens. Also notes in different measures must each have the appropriate accidental attached to be tied with the Tie Notes command.

In this section, we've discussed the use of accidentals in changing note values. Now let's move on and study dots, triplets, quintuplets, and ties.

DOTS, TRIPLETS, QUINTUPLETS, & TIES

Dots mean "give this note half again as many beats." So if a quarter note receives one beat, a dotted quarter note receives one and a half beats. Triplets let you play three notes in the space normally occupied by two. Quintuplets allow you to play five notes in the space normally occupied by four. Ties simply connect all the beats in a group of notes together and play the notes as if they were one long note.

Normally, triplets and quintuplets appear in groups of 3 or 5. *DMCS* doesn't place this constraint upon you. As long as the total number of beats in the measure fits with the time signature setting, you can arrange triplets and quintuplets any way you like.

The Dots, Triplets, and Quintuplets options are located on the left side of the Note Palette just below the Mod Clr control. You use them in your music the same way you use accidentals. To remove duration modifiers from notes, you must delete then re-enter the notes. Again, to deselect a duration modifier in the Note Palette, click Mod Clr. When you make notes part of a triplet or quintuplet, a 3 or 5 appears above the staff for each note.

You can connect consecutive notes on the same space or line with Ties. To tie two or more notes together, drag around them with the arrow and select Tie Notes from the Groups menu. To untie notes, select any note that belongs to the tie and use the Tie Notes command again.

There is a limit on ties: using them to tie notes in chords won't always produce the desired playback result. The music will look right for printing purposes, but the second note in the tie may be re-attacked during playback as though the tie were not there.

Now that we've taken a brief look at using triplets, quintuplets, and ties in your music, let's move on to the next section and explore *DMCS'* octave, crescendo, and diminuendo commands.

OCTAVES, CRESCENDO, & DECRESCENDO

DMCS contains commands that let you control the durations, attack, and ties in your music. You can also adjust the octave and intensity of your music. The Raise and Lower Octave commands in the Groups menu let you tell *DMCS* to, "play everything under this sign one octave higher or lower than it is written." The Crescendo (<) and Decrescendo (>) commands, also in the Groups menu, tell *DMCS* to, "gradually play the music louder or softer." To change the octave for the beginning of *Cleopha*, follow these steps:

1. Select the first five measures for both staffs of Cleopha.
2. Choose Octave Raise from the Groups menu. The octave up sign appears above the affected notes.

3. Play Cleopha , and listen to the difference raising the octave makes.
4. With the same group of notes still selected, choose Octave Lower from the Groups menu and the notes return to normal.

To make the beginning of *Cleopha* crescendo (grow gradually louder), use the following steps:

1. Choose Crescendo (<) from the Groups menu and the crescendo sign appears below the selected notes.
2. Play Cleopha , and listen to the difference crescendo makes. The notes are played at the volume level in effect at the beginning of the crescendo and grow gradually louder until it reaches *fff* (very, very, loud).
3. Choose the Crescendo (<) command again, and the crescendo marker is removed.
4. Now choose Decrescendo (>) from the Groups menu, and the decrescendo sign appears above the selected notes. Play Cleopha and you'll hear that decrescendo is the exact opposite of crescendo — it plays the music gradually softer until it reaches *ppp* (very, very soft).
5. Choose Decrescendo (>) again to remove the marker from the music.

If you want to stop short of *fff* or *ppp*, place the dynamic symbol you want to stop at inside the crescendo or decrescendo sign. Study the effects of the dynamic symbols in the music that came with *DMCS*. Play the music, and listen carefully for volume changes. Press the Space Bar to freeze the music so you can see how it's marked.

Experiment with crescendo and diminuendo. Try finding staffs that are marked *mf* and adjacent staffs that are marked *mp*. Listen to the passage as marked, then reverse the settings and listen again. You can also find places where a repeated melody is played loudly the first time, then softly the next. Reverse the settings, listen, then make them the same.

Patterns of louds and softs give balance and shape to music. A staff filled with triplets, for instance, often needs to be turned down relative to its neighbors or it may be overpowering. For an example, listen to measures 34 through 50 in *Passacaglia* — a song based on the *House of the Rising Sun*. *Passacaglia* also demonstrates how gradually building volume from the beginning to the end of a song can create drama.

Now that you've seen how to use the octave controls, crescendo, and diminuendo, let's take a look at the dynamic modifier symbols; tools that can play an important role in your music.

CONTROLLING DYNAMICS

In addition to the Crescendo and Decrescendo commands from the Groups menu, you can also use the *fff* through *ppp* modifiers in the Note Palette to shape the volume levels between and within the staffs of your songs.

You can use the *fff* through *ppp* symbols at any point in a staff. Just select the desired symbol in the Note Palette, and click the area above the staff where you want the change to take effect. The *fff* symbol plays the music at "full volume," while *ppp* plays music "very, very soft." The other settings range between those extremes. Music always starts at full volume and changes only when it encounters a dynamic symbol. Let's try some dynamic modifiers in *Cleopha*.

1. Select ppp from the Note Palette, and click above the top staff at the beginning of the first measure in the Score window.
2. Select fff from the Note Palette, and click above the top staff at the beginning of the third measure.
3. Select mf (moderately loud) from the Note Palette, and click above the top staff at the beginning of the sixth measure.
4. Now play Cleopha , and listen for the volume changes at the beginning of the song (you may need to slow the tempo with the Beats Per Min control in the Score Setup window).

After you've listened to the piece with your modifications, try using some of the other dynamic symbols in the score. You can use the Note Palette eraser to remove dynamic symbols (position the cursor on the gunsight symbol to the left of the Insertion Arrow and click), and you can also grab dynamic symbols and drag them to other staffs or other locations on the same staff.

When you're through experimenting, let's move on to the next section where we'll discuss repeats, 1st, and 2nd endings.

REPEATS, 1ST & 2ND ENDINGS

In an earlier tutorial, you learned how to copy and paste sections of music to different spots throughout a score. *DMCS* also uses commands that let you specify a passage to be repeated without actually duplicating the music. Using the Begin Repeat and End Repeat commands from the Measures menu lets you instruct *DMCS* to repeat a specified section of music twice. In addition, the 1st and 2nd Ending commands, also in the Measures menu, let you specify measures within a repeated passage that should be played on the first or second repeat only. Cleopha is a perfect example of these commands because measures 6 through 22 are repeated measures. Measure 21 is the ending for the first repeat (1st Ending), and measure 22 is the ending for the second repeat (2nd Ending). Let's take a close look at these measures to see what's going on:

1. First scroll to measure 6, and notice the double bar that separates the fifth and sixth measures. This double bar signifies the beginning of the repeat.
2. Select the arrow from the Note Palette, click the insertion point into measure 6, and pull down the Measures menu . You'll see that Begin Repeat is checked. You can turn Begin Repeat off by selecting it again, but leave it turned on for right now.
3. Scroll until measures 21 and 22 are both visible on your screen. As shown in Figure 2.7 below, each measure ends in a double bar to mark it as the end of the repeat. But each measure also bears the 1st and 2nd ending mark. The number "1" above measure 21 means that measure will be the end of the song on the first repeat, and the number "2" above measure 22 means that measure will end the song on the second repeat. Again, you can turn off the End Repeat and 1st and 2nd Ending commands by unchecking them in the Measures menu, but leave them selected for now.

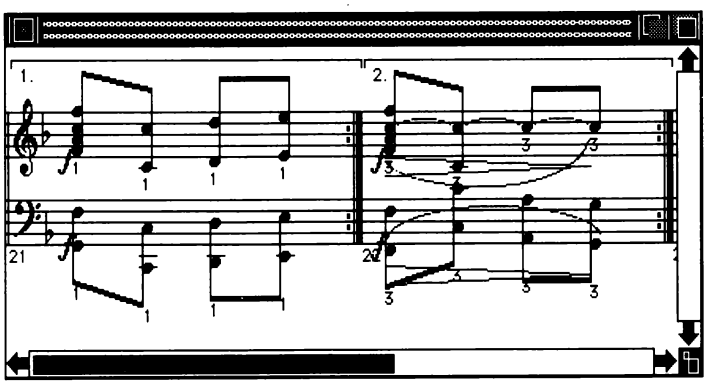


Figure 2.7: 1st & 2nd Endings

4. Now play Cleopha , and listen carefully as you watch the measure counter at the bottom of the Note Palette (you may want to slow down the song with the Beats Per Min control in the Score Setup window). As you watch and listen, you'll see that song plays through and ends on measure 21, then restarts from measure 6, skips measure 21, and ends on measure 22 the second time through.

The use of repeats and endings in *Cleopha* is straightforward and simple, but you can also use them to produce some interesting and complex results. For instance, you can use 1st and 2nd endings anywhere within a repeated section. You might use them at the beginning of a section, for instance, to play a song with one instrument the first time through, and a different instrument the second time through. Just start the repeated song or section with 2 copies of the opening measure. Assign 1st Ending to one of the duplicate measures, and 2nd Ending to the other, then assign different instruments to each.

Try changing the way *Cleopha* sounds and feels by experimenting with different combinations of repeats and endings. When you're ready to move on, we'll discuss the final section on "Entering and Modifying Music": "Beams, Slurs & Flipping Note Stems."

BEAMS, SLURS, & FLIPPING NOTE STEMS

Although these commands may sound like acts in the circus, they really only affect the way your music looks (see Figure 2.8). To use these commands, first select the notes you want to beam or slur, then select the appropriate command from the Groups menu. To "un-slur" or "un-beam" a group , select a note within the group and use the Remove Slur or Remove Beam Notes command again. The same procedure applies for flipping the stems on notes, and you'll find the command in the Notes menu.

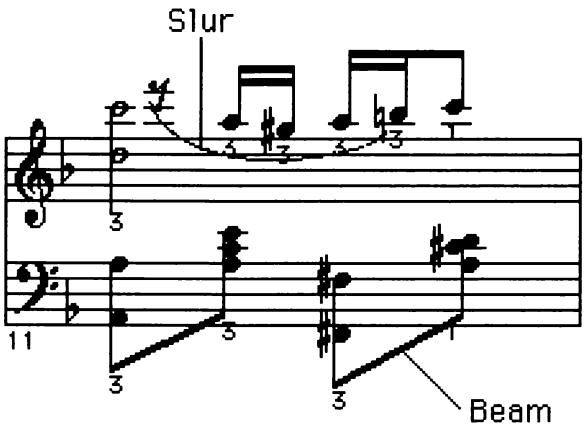


Figure 2.8: Beams and Slurs

Slurs do much the same thing as the legato play style; that is, "play very smoothly, gliding from tone to tone." The effect of slurs on your music is subtle and difficult to hear, especially with some instruments. Using both a slur and the legato play style on the same passage slightly increases the overall effect of smooth overlapping tones.

When you slur a group of notes, *DMCS* draws the slur from the note head of the beginning note to the note head of the ending note in the selected group of notes (see Figure 2.8). Use the Slur (down) command from the Groups menu if the note stems point up, so the slur hangs beneath the notes. Use Slur (up) if the notes stems point up, and the slur is drawn over the notes like an umbrella (see measure 22 of Cleopha). Once drawn, the slur keeps its position on the staff even if you flip the note stems (using Flip Note Stems from the Notes Menu) within the slur. If you decide you want to move a slur to either above or below a staff, first remove the slur, then choose either Slur (up) or Slur (down) from the Groups menu.

You can use slurs at any time while composing, but it's often a good idea to wait until you're sure the notes are in their final positions because moving notes in and out of slurs can have unpredictable results. Another limitation with slurs is that sometimes note positioning makes it impossible for*DMCS* to draw the slur without obscuring some of the notes. If you can't find a good position for a slur above or below a staff, remove the slur and try redoing it as a series of shorter slurs.

Beams join flagged notes to show that they belong to the same beat. They don't effect the way the music plays and are used as a music reading aid only. Beams make it easier to see the rhythmic patterns in a song's structure.

DMCS won't beam notes across bar lines, nor will it beam notes of different staffs. Selecting and beaming notes in more than one measure or staff beams all the selected notes, but only within their own measures.

Choose Flip Note Stems from the Notes menu to reverse the stem direction for any currently selected notes. If the selection includes notes with stems pointing in both directions, Flip Note Stems points all the stems in the same direction.

This concludes the tutorial section on entering and modifying music. In the next set of tutorials you'll learn about *DMCS*'s powerful text formatting functions that let you add lyrics into your music.

V ADDING LYRICS

The human voice was the very first musical instrument, and even in this day of computer synthesized music, there is still nothing that can match its beauty and versatility. *DMCS* doesn't forget this and lets you enter lyrics into your musical scores just like any other musical notation.

Using the text insertion tool from the Note Palette (the I-Beam just below the arrow), you can enter text anywhere in a score. Before entering lyrics or other text, however, you should click the Printer Width button in the Score Setup window. The Printer Width button enlarges the onscreen score to the size it will print on 8 1/2 by 11 inch paper, so you can position text correctly within the score.

Now that you've seen how to change styles and sizes, let's take a look at entering lyrics in*DMCS.*

ENTERING LYRICS

Clicking on the score with the I-beam opens a blank text box. Clicking within the box sets the insertion point and typing on the computer's keyboard inserts text from that point. You can also Cut, Paste and Copy text just as you can with music.

It's usually a good idea to stretch a text box for the entire staff width so the text you enter lines up properly all the way across the page. Using the I-Beam tool, click a text box into the score and stretch it to the Score window border, then scroll forward and stretch it to the end of the staff.

Now you've used almost all aspects of *DMCS*. You've learned to set up the score and playback options, enter and edit music, and add lyrics. Now let's move on to our last set of tutorials about printing.

VI PRINTING

One of the joys of using *DMCS* is its printing capabilities. Once you have polished your musical piece to the height of perfection, you can print out sheet music on any of the printers that the Amiga supports (see your Amiga manual, page 5-3). Music prints with 1/4-inch left and right margins. If you want wider or narrower margins, use the Score Width control in the Score Setup window to widen or narrow the score. Score width is measured in pixels and there are 72 pixels in an inch. Let's see how we set up *Cleopha* for printing.

SETTING UP FOR PRINTING

There are a number of options you should set before you start printing to make sure your printout is correct. To print out *Cleopha* on the Epson FX-80, for example, use the following procedure:

1. Click on the Paged Score radio button in the Score Setup window. The score is displayed vertically, one staff under the other, as it will be printed.

2. Click the right arrow on the Bars Per Line control in the Score Setup window to increase the numbers of measures per line to "3." You'll see the measures narrow onscreen so the Score window can accommodate three measures.
3. Click the Printer Width button, and you'll see the measures widen onscreen to the width they will be printed at.
4. Cleopha should now appear onscreen as it will be printed. Select Print Score from the File menu to begin printing. Hit Cancel if you wish to abort the process.

In addition to the options listed in the steps above, you can also use Hide Instruments in the Score Setup window to turn off instrument names for any staff, or staffs, before printing. Use Hide Key/Clef, also in the Score Setup window, to hide the clef, key signature, and time signature for any staff, or staffs.

If you want to remove the tempo mark before printing, use the following procedure:

1. Make all the tempo settings within the song equal to the first.
2. Select all the notes in the measure with the only remaining tempo mark and use Copy from the Edit menu.
3. Now choose Delete Measure from the Measures menu. Now the measure, and tempo mark, are removed from the score.
4. Choose Insert Measure from the Measures menu and a new blank measure is inserted in the same place as the original.

♪ *If you delete the first measure and then insert a new one, you must reset the key and time signatures for the new measure.*

5. Finally, choose Paste to reinsert the notes in the blank measure.

NOTES

NOTES

This Reference Guide is divided into four parts that provide a concise summary of the all the major functions of DMCS.

***I. Keyboard Shortcuts**— lists all the keyboard commands available in DMCS. Then, the commands of DMCS.*
***II. Menus**— outlines each of DMCS's menus, and the commands contained in each.*
***III. Helpful Hints** — provides tips and techniques, organized by the various program functions, to help you quickly become a DMCS power user.*
***IV. Glossary**— provides definitions of the computer and musical terms used throughout the manual.*

I KEYBOARD SHORTCUTS

Many of the commands and functions in *DMCS* can be called into action by pressing a key on your computer's keyboard along with the right-hand Amiga key (R Amiga). Using a keyboard shortcut is often faster and more convenient than using the mouse to operate onscreen controls. All of *DMCS's* keyboard shortcuts are listed below, first by menu, then by window.

EDIT MENU

Undo	R Amiga-Z
Cut	R Amiga-X
Copy	R Amiga-C
Paste	R Amiga-V

PLAY MENU

Play Song	R Amiga-P
Play Section	R Amiga-S
Stop Play	R Amiga-Q
Resume Play	R Amiga-R
Begin Section	R Amiga-<
End Section	R Amiga->
External Speaker	R Amiga-E

NOTES MENU

Up Half Step	R Amiga-U
Down Half Step	R Amiga-J
Up Level	R Amiga-I
Down Level	R Amiga-K
Up Octave	R Amiga-O
Down Octave	R Amiga-L
Half Time	R Amiga-H
Double Time	R Amiga-D
Flip Note Stem	R Amiga-F
Set Play Style	R Amiga-Y

GROUPS MENU

Ties Note (Up)	R Amiga-T
Beam Notes	R Amiga-B

MEASURES MENU

Midi Channel #	R Amiga-M
Midi Preset #	R Amiga-N
Midi Setup	R Amiga-G
Mac Sounds	R Amiga-A

NOTE PALETTE WINDOW

NOTES

1 selects a whole note
2 selects a half note
3 selects a quarter note
4 selects for an eighth note
5 selects a sixteenth note
6 selects a thirty-second note

♪ *Press the Shift key at the same time you type each number key to select the corresponding rest.*

TOOLS

Eraser	**X**
Mod Clr	**C**
Arrow	**F10**
I-beam	**'**

TIME MODIFIERS

Dot	**D**
Triplet	**L**
Quintuplet	**V**

ACCIDENTALS

Flat	**B**
Natural	**N**
Sharp	**R**

DYNAMIC MODIFIERS

ppp	**p-p-p**
pp	**p-p**
p	**p**
mp	**m-p**
mf	**m-f**
f	**f**
ff	**f-f**
fff	**f-f-f**

SCORE WINDOW

To change a note's duration or time modifier, first select a note or group of notes, then hold down the **Alt** key while clicking the new note duration or time modifier in the Note Palette.

♪ *You can also use a Note Palette keyboard shortcut in conjunction with the Alt key shortcut. The Alt key technique doesn't work with dynamic modifiers or accidentals.*

To remove time modifiers, select the note or notes, then hold down the **L Amiga** key while clicking **Mod Clr**, **or pressing C.**

Press the **Space Bar** to freeze the display at any point during the playback.

Press **Del** to delete selected notes, groups of notes, or chords.

Copy a selected note or chord by holding down the **Alt** key, then dragging the selected note or chord horizontally.

II MENUS

You give *DMCS* commands using the nine pull-down menus listed below:

- **File**
- **Edit**
- **Window**
- **Play**
- **Notes**
- **Groups**
- **Measures**
- **Sounds**
- **Fonts**

Each menu holds commands that affect different aspects of your compositions. The Notes menu, for instance, affects individual notes, while the Groups menu affects groups of notes. *DMCS's* nine menus and the commands they contain are explained in the following sections.

FILE

The file menu performs file maintenance activities such as opening new or existing scores, saving scores, printing scores, and saving scores as sequencer files. The commands in the File menu are explained below.

NEW SCORE

Opens a blank, untitled score. Each new score appears with a treble and bass staff, one empty measure, a 4/4 time signature and a C key signature.

OPEN SCORE

Opens a requester containing a directory of *DMCS* scores and Simple Music Interchange File Format (SMUS-IFF) files saved on the disk in the active drive. Double-click the score you want to open. Click Cancel to leave the requester without opening a file.

SAVE

Stores the current score to disk, saving the changes over the original version of the score.

SAVE AS

Opens a requester in which you can name a new score, or rename a changed score, and save it under that name. You must use this command the first time you save an untitled score. Use this command to rename and save a score with a new name, thus preserving the original version of the score.

REVERT

Reloads the score from the disk, thus restoring it to the condition it was in when you last saved it.

PRINT SCORE

Prints a copy of the current score using your computer's default printer.

SHOW MEMORY

This window contains information about the amount of RAM available for your composition. The first line tells how much memory you still have available. The second line tells how much memory is currently being used by the song itself. The third line tells how much memory is being used by instruments. The fourth line tells how much memory is being used by the Clipboard. The fifth line describes the "memory level" of the program as a number from one to five — the higher the number, the more memory available. If the memory level falls to three or below, you should be especially careful about saving your score. If you find that you are running short of memory and still have a considerable amount of work remaining, you should consider splitting the composition into two files to avoid the risk of running our of memory.

SAVE AS SMUS FILE

Lets you save a score as a special file in the Simple Music Interchange File Format (SMUS-IFF) that can be transferred to other music programs. SMUS-IFF files contain information describing the music and score in a compact form that doesn't contain graphic information. Using the Open Score command,*DMCS* can also open SMUS-IFF files from programs such as *Instant Music, by Electronic Arts.*

EDIT

The Edit menu contains commands that let you perform editing functions on your scores. Cut, for instance, lets you remove a note or group of notes from one area of the score, then Paste it into another area. The various Edit menu commands are explained below.

UNDO

Reverses your most recent action in the Edit, Notes, or Measures Menu. It also reverses your most recent musical entry or deletion. (Undo does not reverse Cut. Use Paste to undo a Cut).

CUT

Removes all selected notes and rests from the score and places them on the Clipboard (replacing the Clipboard's current contents). Measures to the right of the cut measure move left and fill in areas that are emptied by the cut.

COPY

Copies all the selected notes and rests to the Clipboard (replacing the Clipboard's current contents). Unlike Cut, Copy doesn't remove anything from the score.

PASTE

Inserts the contents of the Clipboard into your Score at the insertion point. If notes are selected in the score when you use Paste, the Clipboard contents replace the selected passage (think of it as "pasting over" the selection).

If the Clipboard contains less than a measure, Paste puts the Clipboard contents in the measure containing the insertion point or in the first measure containing a selection. If the resulting measure contains more beats than the time signature calls for, the notes or rests for those beats are dimmed.

If the Clipboard contents begin or end with a full measure, the pasted material will begin or end with a measure bar. If the Clipboard contains material from multiple measures, the content is pasted exactly as it is in the Clipboard, measure bars and all.

If the Clipboard contains material from more than one staff, the Clipboard contents are pasted *downward* into the corresponding staffs. For example, if Staff One and Two are copied to the Clipboard, then the insertion point is placed in Staff Two. The Clipboard contents will be pasted into Staff Two and Three. Paste does not add staffs to accommodate the selection on the Clipboard. If there aren't enough staffs for all of the Clipboard, only the portion that can be accommodated by the score is pasted.

If Two Tracks Per Staff is used while the Clipboard contains one track, the track into which the Clipboard is pasted is determined by the direction of the note stem in the Note Palette Change Track control. If you Paste into a track that already contains music, the Clipboard contents are inserted ahead of the existing music.

CLEAR

Removes the current selection like Cut but doesn't copy to the Clipboard.

SELECT ALL

Selects all the music in the score.

WINDOW

The Window menu lets you open or activate one of the four windows that control *DMCS*:

- **Score**
- **Piano Keyboard**
- **Score Setup**
- **Note Palette**

Selecting a title from the Window menu opens the window if it's currently closed or brings it to the top and activates it if it is open but buried beneath other windows.

DMCS's windows may differ from windows in other applications you have worked with, where only the window "on top" is active. Any control in a *DMCS* window that's visible onscreen is also active — you don't need to bring the window to the top to use the control. But sometimes you must bring a window to the top to access *all* of its controls. To bring a window to the top, click its title bar or an unused portion of the window, or choose its title from the window menu. Now let's take a look at each of the windows.

SCORE

This is the main composition window and appears onscreen with the Note Palette and Piano Keyboard when you start *DMCS*. A *DMCS* score, like standard sheet music, contains one or more staffs, which in turn contain the notes, time signature, clef, key, dynamics, lyrics, chords, and other information that combine to describe a piece of music.

ENTERING NOTES IN THE SCORE
You can enter notes in three ways:

- By selecting notes from the Note Palette and clicking directly in the score;
- By using Insert Notes in Score and clicking keys in the Piano Keyboard window;
- By using a MIDI device (such as a keyboard) connected to the Amiga with a MIDI Interface.

The following section discusses note entry with the Note Palette and pointer. See "Piano Keyboard" and "Sounds" below for more information on entering notes using these methods.

Selecting an item from the Note Palette transforms the pointer into the shape of the selected item. Clicking the mouse on any spot in the Score Window then inserts the item in the score. Measures in the Score Window are "smart." They know how many beats they already contain (specified by the time signature). Therefore, the exact horizontal placement of a note depends on the note duration and the number of beats already in the measure. You enter notes by measures, separated by bar lines. If a measure receives too many beats, the excess notes or rests are dimmed and aren't played during playback. If there are fewer beats than the time signature calls for, the missing beats are played as rests at the end of the measure.

SELECTING NOTES
Clicking on the diagonal arrow in the Note Palette changes the pointer into an arrow, which you can use to select notes. You select notes by clicking them with the arrow, or by dragging a selection box (see Glossary) around them. The last note you enter in a score is selected until another note is entered or selected.

INSERTION POINT
The insertion point is a flashing vertical line that indicates where material pasted from the Clipboard or inserted from the Piano Keyboard appears, and where various commands from the menus will take effect. Move the insertion point by clicking the arrow at any point in the score.

SCORE SETUP

The Score Setup Window contains controls for

- **Adjusting playback volume and speed.**
- **Adding new and modifying existing staffs**
- **Onscreen and printed formatting**

The controls in the top half of the Score Setup window affect the entire score. Those in the bottom half affect the staff indicated by the Choose Staff Number control in the center.

SCORE CONTROLS

BARS PER LINE

Controls the number of measures (1 to 10) on a line and how many will be printed per line on paper. Note that you can vary the size of the window or the score, as well as the number of bars per line. Use the scroll bars to see all of the score if it is larger than the window, or use the Score Width or Screen Width controls in the Score Setup window to make the entire score visible in the Score Window.

BEATS PER MINUTE

Lets you tell the program how fast to play music in the score. If you use this control during playback, the change will be heard immediately.

SCORE WIDTH

Lets you set the width of a paged score to any setting between 40 and 1000 . The Screen Width button sets the score width so that all the bars per line called for in that setting can be seen in the Score window. The Printer Width button sets the score to a width which will produce a printed score with 1/4 inch margins on 8 1/2 by 11 paper. The width is measured in pixels. There are 72 pixels in an inch.

VOLUME

Lets you control the overall volume level of the playback.

PAGED SCORE

A highlighted Paged Score button tells the program to display the music as it will appear when printed instead of as a score which scrolls continuously from left to right.

2 TRACKS PER STAFF
A highlighted 2 Tracks per Staff button sets the score so that two separate rhythmic tracks of music can be entered in each staff.

SHOW PLAY STYLES
There are sixteen numbered play styles controlled from the Notes menu. The style numbers appear on the score if you click on the Show Play Styles button.

STAFF CONTROLS

CHOOSE STAFF NUMBER
Lets you tell the program which staff you want the other settings in the lower half of the window to apply to. The top staff is number 1, the next is number 2, etc. up to 8.

TREBLE, BASS, TENOR, AND ALTO CLEFS
Let you choose the beginning clef for the staff indicated by the Choose Staff Number control. You can change Clefs within a staff by using the Change Clef command in the Measures menu.

ADD STAFF
Adds a staff to the score. (New staffs always appear with a treble clef. Be sure to use the clef setting to pick the clef you want). Scores can contain up to 8 staffs.

DELETE STAFF
Removes the staff indicated by the Choose Staff Number box.

STAFF SOUND ON
Turns the sound on and off for particular staffs during playback. First pick the staff you want with Choose Staff Number, then click the button off to turn off the sound for that staff. Click again to turn the sound on again. By turning the sound on or off for each staff, you can listen to those parts of a score which you choose without hearing the other parts.

HIDE STAFF
Activate this button to hide the staff selected in the Choose Staff Number control. To work on an individual part or to print one or several parts of a larger piece of music at a time, use this control. Text inserted above or below a staff is hidden when the staff is hidden.

HIDE INSTRUMENTS
Click on this button to hide all the instrument names for the staff indicated by the Choose Staff Number control.

HIDE CLEF/KEY
Click on this button to hide the clef and key signature for the staff indicated by the Choose Staff Number control.

SPACE ABOVE STAFF & SPACE BELOW STAFF
Lets you determine how much space appears above and below **each?** staff to fit the needs of your music. Changes made here are instantly reflected on the screen. If you are planning to include lyrics in a score, add the extra space for your lyrics with these controls. The available space is measured in pixels. A standard note head is **5 pixels high?.**

NORMAL, PLAY 1 OCTAVE HIGH, PLAY 1 OCTAVE LOW
Select appropriate button to change the pitch of all notes on a selected staff

NOTE PALETTE

The top part of this window contains notes and rests of varying durations, while the bottom part contains most of the "note modifiers" used in standard music notation, including "time modifiers" such as triplets and quintuplets, "accidentals" such as sharps and flats, and "dynamic modifiers" from "*ppp* " to "*fff* ". The middle part contains the following tools you will need as you work:

ARROW
Use the arrow for selecting from menus or windows, including the Note Palette, or for selecting notes or larger sections of a score (see **Editing with the Note Palette** for more information on selecting from the score). To make a selection from the Note Palette, point and click. The most recently selected item will be displayed in red. Other selections which remain active are displayed with a red border. The arrow is also used for moving the insertion point throughout the score, clicking onscreen controls, and selecting commands from the menus.

When you click an item in the Note Palette, the pointer takes the shape of the selected item (as well as any other active selections — for example a dotted, sharped eighth note). If one or more items from the note palette have already been selected and the pointer appears as the selected items, click on the arrow to get the arrow back.

MOD CLR
Turns off all modifier selections simultaneously.

ERASER
Use the eraser (the Circle with the large X) to remove notes (including individual notes in a chord), rests, and dynamic modifiers from the score by first selecting the eraser and then clicking on a note, rest, or dynamic modifier with it. The eraser does not remove accidentals or time modifiers.

I-BEAM
Click on the I-beam (just below the arrow) to insert text. Dragging with the I-beam creates a text box. Clicking inside the box sets the insertion point. Cut, Paste and Copy are supported when Deluxe Music is inserting text. To move a box, drag it by the handle on the upper left. To resize one, drag the handle on the lower right. To re-select a box, click on any of its text. Text is considered by Deluxe Music to be connected to the staff which is closest to the center of the text box and will be hidden when that staff is hidden.

CHANGE TRACKS
Click here to change the track on a staff which has two tracks per staff turned on from the Score Setup window. The notes of Track One are entered with the note stem up, while the notes of Track Two are entered stem down.

WORKING ON THE SCORE FROM THE NOTE PALETTE
To insert a note or rest, make a selection from the Note Palette, and then point to a spot on the Score and click. The note will be added to the staff to the right of the note to the immediate left of that spot . As described in the Entering notes in the score, horizontal placement will depend on the duration of the note entered and the number of beats already inserted into the measure. If you drag the mouse vertically, the pitch of the note will go up or down to reflect its position on the staff and the tone being sounded will change to reflect the position on the staff.

ADD A PREMODIFIED NOTE TO THE STAFF (e.g., a sharped, flatted or dotted note)
By first selecting the modifier and then the note, then clicking on the staff.

DYNAMIC MODIFIERS
ff, mf, etc., are selected from the Note Palette and are applied to the staff position rather than notes.

ACCIDENTALS
Are added by selecting from the Note Palette and clicking to the left of the note you wish to modify. To change an accidental already inserted into the score, simply choose a different accidental and click over the accidental you wish to change. Deluxe Music automatically hides accidentals that are assigned by the key signature unless an earlier note in the measure has been modified with an accidental.

EDITING WITH THE NOTE PALETTE
Select individual notes or chords in the score by clicking on them. Select groups of notes and chords by dragging a selection box around them. Use commands in the Edit, Notes and Groups menus to act on selected notes.

Select larger sections of a score by clicking on a notehead, scrolling to the desired position in the score, and then clicking on another notehead while holding down the Shift key. If the second note selected is on a different staff, then all the staffs between the two selection points will be selected.

Remove individual notes or rests by selecting them with the pointer and pressing Delete. Or choose the Eraser and click on the notehead. Or use the Cut command.

Change the duration of notes in the score by selecting a note or notes with the arrow, holding down the Alt key, and clicking on the appropriate box in the Note Palette (or using keyboard shortcuts).

Add dots, triplets, and quintuplets to individual notes by selecting the time modifier and then pointing and clicking on the notehead you wish to modify.

Add dots, triplets, and quintuplets to groups of notes in a score by selecting the notes with the arrow, holding down the Alt key, and clicking on the appropriate box in the Note Palette (or using keyboard shortcuts). Press the Alt key again and click the appropriate box in the Note Palette again to remove the modifier.

Change accidentals (sharps, flats, and naturals) by placing a new accidental over an existing accidental.

Change dynamic modifer settings (p, pp, ff, etc.) already inserted in the score, by holding down the Right Amiga key and clicking on a dynamic modifier in the score with the arrow. A requester appears on the screen. Select any number from 0 to 127. The volume of the selected dynamic modifer will be changed.

PIANO KEYBOARD

This window contains a five-octave keyboard. You can play the notes of the piano by clicking on them with the pointer. In this way, you can try out any part of your composition without inserting the notes into the score. The piano keyboard, however, will only play one tone at a time.

You can also use the piano keyboard window to enter notes, chords, and rests into the score window (see below).

The keyboard is also a Player Piano when this option is selected from the Play Menu. When selected, the appropriate piano keys flash whenever you play a song or a section of song. During composition, the appropriate keys flash when notes are placed in the score.

INSERT NOTES IN SCORE
Clicking on the Insert notes in the score box on the piano keyboard turns the note insertion function on or off. When it is on, notes at the corresponding pitch will be inserted into the score as you "play" the piano with your mouse. Be sure to use the arrow to select the insertion point in the score before you start playing the piano. The note duration value is determined by the selection in the Note Palette (You can use keyboard shortcuts to quickly change the duration of piano notes as you play). Deluxe music automatically draws the bar lines and creates new measures when you insert notes into the score with the piano.

CHORDS
Click on the Chords button to tell the program that you want to insert several notes at the same vertical position to make a chord. When Chords is turned on, use Advance to move the insertion point to the next available position in the staff.

INSERT REST
Click this box to insert a rest instead of a note. Change the duration of a rest in the same way as you would change the duration of a note.

If Two Tracks per Staff is turned on in the Score Setup window, notes are entered in the track indicated by the direction of the note stems in the Note Palette.

The keyboard makes the sound of the instrument checked in the Sounds menu. To change the play style for the keyboard sound, use Keyboard Play Style in that same menu.

PLAY

PLAY SONG

Plays the entire song from beginning to end.

PLAY SECTION

Plays the section of the song specified with the "Begin Section" and "End Section" marks (<< and >>). See "Begin Section & End Section" below. Uses Flash Notes and Player Piano if those commands are selected (see below).

STOP PLAY

Stops the playback and returns the score to normal display. Pressing the Space Bar also stops playback, but brings the measure shown on the measure counter -- at the bottom of the Note Palette -- into the score window, and selects the last note played.

RESUME PLAY

Resumes playing the score from the measure that was playing when you used Stop Play, or pressed the Space Bar.

BEGIN SECTION & END SECTION

Define a specific section for playback with the Play Section command. Begin Section marks the measure containing the insertion point, or a selection, with an international open quote (<<). End Section marks the measure containing the insertion point, or a selection, with an international close quote (>>). The first measure of the score is always *DMCS'* default section -- the Begin and End Section marks always appear above the first measure when you open a score.

FLASH NOTES

When "Flash Notes" is on, using "Play Song" causes the music to flash and scroll by as the score is played. Using "Stop Play" freezes the scrolling music at the last note played before the Stop Play command was issued.

Using Play Section with Flash Notes causes each note to flash as it plays, but only for the section chosen.

PLAYER PIANO

Causes the corresponding keys in the Piano Keyboard window to flash as the music plays. Bring the Piano Keyboard window to the top before playing the song to avoid slowing down the music during playback. The red indicates that this command is on; select it again to turn it off.

REPEAT PLAY

Causes the music to play continuously until you use Stop Play. Works with Play Song, or Play Section. A check mark next to this command indicates it is on; select it again to turn it off.

NOTES

The Notes menu contains 12 commands that affect selected notes in various ways. Each Notes menu command is explained below.

UP & DOWN HALF STEP

Raises or lowers the selected notes one half step, the smallest interval in conventional Western music. (Adjacent piano keys are one half step apart). *DMCS* inserts accidentals as necessary to show the change in correct notation. These commands produce sharps and naturals only if the key signature contains sharps. They produce flats and naturals only if the key signature contains flats.

UP & DOWN LEVEL

Raise or lower selected notes to the next vertical position in the staff (the next space or line). Accidentals move right along with the notes they modify.

UP & DOWN OCTAVE

Raises or lowers the selected notes a full octave (12 half steps).

INVERT CHORD UP & DOWN

Raises the lowest tone in a chord one octave, or lowers the highest tone in a chord an octave, respectively. If the chord already contains the inverted note, the note being moved is placed an octave above or below the second note in the chord.

HALF TIME

Halves the duration of the selected notes and rests. For example, half notes become quarter notes. Note, "half time" refers to note duration, not tempo.

DOUBLE TIME

Doubles the duration of the selected notes and rests. For example, half notes become whole notes. Note that, "double time" refers to note durations, not tempo.

FLIP NOTE STEM

Inverts the stems of selected notes. In a one track per staff score, *DMCS* automatically flips notes below the middle of a staff up, and notes above the middle of a staff down. If there are two tracks per staff, notes in the first track have their stems up, and notes in the second track have their stems down.

Using this command on a group of notes that have stems pointing in both directions, aligns all the stems in the same direction. Using the command again reverses that direction.

SET PLAY STYLE

Opens a requester box from which you can pick a play style for selected notes. Click OK and the play style number appears above every note it applies to (or below each note in track 2 music). You can also hide the play styles by unchecking the Show Play Styles control in the Score Setup Window.

GROUPS

The Groups menu contains commands that affect selected groups of notes by adding or removing notation such as, ties, slurs, and beams. All commands in the Groups menu can be turned on and off, and all act on notes which have been selected with the arrow. To cancel a group command, you need only select one note in the group, and use the command again. Each of the Groups menu commands is explained below.

TIE NOTES (UP) & (DOWN)

Join selected notes of the same pitch (either above or below the notes), so they are played as one continuous tone. Drag notes horizontally to improve the appearance of the tie. Remove Ties replaces the Tie Notes commands when selected notes are already tied. Tie Notes is the only command in the Groups menu which does not use additional RAM. Also, instruments are especially RAM intensive.

BEAM NOTES

Connects selected notes with a heavy black line. You can adjust the angle of the beam by dragging it to obtain the best appearance. Beam Notes has no effect on the way the music plays. Most printed orchestral music uses beams to connect notes of the same beat. *DMCS* replaces this command by Remove Beams when selected notes are already beamed.

SLUR NOTES (UP) & (DOWN)

Draw a curved line over or under two or more selected notes, and playback glides smoothly from note to note within the slur. Like ties and beams, the commands are replaced by Remove Slurs when selected notes are already slurred. The audible effect of this command is subtle and difficult to hear with some instruments.

CRESCENDO & DESCRESCENDO

Plays the selected notes successively louder (crescendo, <) or softer (decrescendo, >). The volume change begins at the current volume setting when the crescendo or decrescendo sign starts, and ends with *fff* or *ppp* unless you place a different dynamic modifier within the >, or < sign. In that case, the crescendo or decrescendo ends at the volume level set by the dynamic modifier.

OCTAVE RAISE & LOWER

Marks the selected notes for playback an octave higher or lower than originally written.

MEASURES

The Measures menu contains 15 commands that affect entire measures and staffs. Each Measures menu command is explained below.

♪*Operations performed with the Measures menu cannot be Undone.*

SET TIME SIGNATURE

Sets a time signature for all the staffs in the score, beginning with the measure containing the insertion point or selection. The time signature stays in effect until you assign a new one in a subsequent measure.

Click a number in the top row of the time signature requester box to set the number of beats each measure will contain. If you don't see the number you need, click the Other scrollbar and scroll it to any whole number up to 99.

Click a number in the bottom row to set the note value that receives one beat. (For example., 4/4 means 4 beats to the measure, quarter note gets one beat, and 6/8 means 6 beats to the meaures, 8th note gets one beat.)

SET KEY SIGNATURE

Sets a key signature that takes effect beginning with the measure containing the insertion point or selection. The key signature stays in effect until you set a new one in a subsequent measure.

Selecting different signatures shows your selection on the mock measure in the upper left of the key signature requester box. Click OK when you see the one you want.

If the affected measures contain music, click the Don't Transpose button to leave the notes as they are. Click Transpose Up or Transpose Down to move existing music up or down to the scale of the new key.

SET CLEF

Opens a requester box from which you can choose one of four clefs: treble, bass, alto, or tenor. Click OK to assign the selected clef to the measure containing the insertion point or selection. The assigned clef remains in effect until you assign a different clef to the same staff in a later measure.

SET INSTRUMENT

Assigns the selected instrument in the Sounds Menu (including MIDI channels and presets) to the staff and measure containing the insertion point or selection. An instrument remains in effect for a staff until you set a different instrument in a subsequent measure of the staff.

SET TEMPO

Assigns the current Beats Per Min value from the Score Setup window at the measure containing the insertion point or a selection. The new setting remains in effect until you reset tempo at a later measure. The setting appears in the score above the staff and measure where the change takes place.

♪ *If you use many tempo changes in a song, select Set Tempo in the first measure to establish the starting tempo; otherwise, the new tempo setting is used by DMCS for the entire score. Also, when you include tempo changes in music with repeats, be sure to set the tempo back to the original value at the beginning of the repeat, or DMCS will play the altered tempo for the repeated portion of a score.*

INSERT MEASURE

Inserts a blank measure (in every staff of the score) in front of the measure containing the insertion point or selection.

SPLIT MEASURE

Inserts a bar line at the insertion point, thus splitting a measure in two.

JOIN MEASURES

Removes the bar lines that separate adjacent measures containing the selected notes. (Selections must span two or more measures.)

DELETE MEASURE

Erases the measure(s) containing the insertion point or selected notes.

REALIGN MEASURE

Moves the notes within a measure so they are displayed in proportion to their duration. If a bar line has been moved, Realign Measure restores a measure to standard length and note positioning.

BEGIN & END REPEAT

Inserts a "begin repeat" or "end repeat" symbol in the measure containing the insertion point or selection. *DMCS* plays the music that lies between the symbols twice before proceeding to the following measures.

1ST & 2ND ENDING

Used in conjunction with the repeat signs, the "1st Ending" marker can be used on any measures between the repeat signs to say "play this only the first time through." The "2nd Ending" marker can used on any measures between the repeat signs that you want played the second time through, but not the first.

DOUBLE BAR

Inserts a double bar at the end of the measure containing the insertion point or selection. A double bar marks the end of a section of a musical composition.

SOUNDS

Deluxe Music Construction Set includes a set of digitized instruments that you can use in your scores for playback, or that you can play in real time with the Piano Keyboard window. *DMCS* can also control an external MIDI instrument, through a MIDI Interface, and can use the MIDI device's preset sounds during playback, or with the Piano Keyboard window. These sounds are controlled from the Sounds menu. A generic instrument called "First Voice" is loaded into the Sounds menu when you start *DMCS*. (See "Load Instrument" below.) The Sounds menu also contains commands that let you control and use a MIDI device (such as a keyboard), interfaced to *DMCS* through a MIDI interface (see "Appendix A: Using MIDI Instruments" for more information). Each Sounds menu command is explained below.

MIDI CHANNEL 1

Opens a secondary menu from which you can choose one of up to 16 different MIDI channels. The channel number currently in use is shown in the secondary menu in red and in the MIDI Channel # command in the Sounds menu. The number of channels you can use is determined by the capabilities of your MIDI device, consult your Owner's Manual.

Use the Set Instrument command from the Measures menu to assign the MIDI channel and preset to a specific staff and measure in the score. MIDI presets and channels are shown in the score like regular *DMCS* instruments. You may not use the same MIDI channel for the same measure number in different staffs — each staff must have its own MIDI channel. (See Appendix A for more information about MIDI channels.)

MIDI ACTIVE & MIDI INPUT ENABLED

Turns the MIDI Port and MIDI input capability on or off. Make sure you turn the MIDI port off before reconnecting another device to the Amiga ports. Turn MIDI Input Enabled off if you want to play your MIDI device without inserting notes in the score.

MIDI SETUP

Opens a requester box in which you set the following MIDI interface parameters:

MIDI PRESET
Changes the settings of the external MIDI device from within the score. You can select a number from 0 to 128. Click OK to confirm your entry. The number of presets you can use is determined by the number stored in your MIDI device, consult your Owner's Manual.

Some MIDI devices number their presets from 0 to 127, but *DMCS* assigns "none" to preset 0. For this reason, you must add one when assigning preset numbers for some devices. For instance, to use preset 0 on a device where the presets are numbered from 0 to 127, you would assign the preset as 1 in *DMCS*. Preset 1 would be assigned as 2, 2 as 3, 3 as 4, and so on. See the Owner's Manual for your MIDI device to determine how the presets are numbered.

Use the Set Instrument command from the Measures menu to assign the MIDI channel and preset to a specific staff and measure in the score. MIDI presets and channels are shown in the score like regular *DMCS* instruments. You may not use the same MIDI channel for the same measure number in different staffs — each staff must have its own MIDI channel. (See Appendix A for more information about MIDI channels.)

CHANGE INPUT DELAY
Lets you control the "Input Delay" that enables *DMCS* to determine the duration of notes inserted in the score from an external MIDI device. When you play a note on the MIDI device, the "Input Delay" is the amount of time, measured in sixtieths of a second, that must elapse before the note changes to the next larger note duration. For example, if you select a quarter note from the Note Palette, and set the Input Delay to 60 (60/60ths of a second, or one second), then playing a note for less than one second on the MIDI device inserts the note in the score as a quarter note, holding the note for one to two seconds changes it to a dotted quarter note, holding for two to three seconds changes it to a half note, and so on. (See Appendix A for more information about entering notes from a MIDI device.)

REMOVE INSTRUMENT

Removes the selected instrument from the Sounds Menu, and score.

LOAD INSTRUMENT

Opens a requester box containing a directory of *DMCS* instruments. Select the instrument you want, and click to open. To close the requester box without loading an instrument, click the Cancel button. Instruments loaded into *DMCS* are shown in the top third of the Sounds menu, with a check mark in front of the active instrument. Instruments are saved with the score.

♪ *The Load Instrument command loads instruments into the Sounds menu only, not the score. Use Set Instrument from the Measures menu to assign selected instruments to the Score. Using Play Song or Play Section without instruments, causes DMCS to use "First Voice."*

KEYBOARD PLAY STYLE

Sets the play style you'll hear for the checked instrument (including MIDI) when you click the Piano Keyboard keys.

HELPFUL HINTS

This section contains pointers for working efficiently with *Deluxe Music Construction Set*. The first part is a summary of commands for manipulating notes and chords in the score, listed by function. The rest of the section offers practical tips on working with the Amiga screen, entering text and printing, editing and fine-tuning your score, and manipulating the sounds produced by *DMCS*. Finally, there is a brief section entitled "Hints on Composing and Writing Music for Beginning Composers."

WORKING WITH NOTES AND CHORDS

ENTER NOTES AND CHORDS...

- with the arrow, using the Note Palette or keyboard shortcuts to set note duration. Hold down left mouse button and drag the note horizontally to change the note duration before dropping it on the staff.
- from the Piano Keyboard, using the Note Palette or keyboard shortcuts to set note duration.
- from an external MIDI device connected to the Amiga by a MIDI Interface. Select the 1/32 note from the Note Palette and vary the input note duration by playing notes on the MIDI device for longer periods.

CHANGE NOTE AND CHORD DURATION...

- by selecting a note in the score, holding down the left Amiga key, and clicking a new note value in the Note Palette, or by using a keyboard shortcut.
- by using Half Time and Double Time in the Notes Menu.

CHANGE THE PITCH OF A NOTE OR CHORD...

- by dragging it vertically in the staff. The pitch you hear reflects the actual pitch of the note.

- by selecting a note or chord and using the commands from the Notes Menu.
- by adding an accidental from the Note Palette or using a keyboard shortcut.
- by selecting Play 1 Octave High, or Play 1 Octave Low in the Score Setup Window.

ADD NOTES WITH SHARPS AND FLATS TO THE STAFF...

- by selecting the modifier, then the note, then clicking the staff.

ADD NOTES WITH DOTS, TRIPLETS AND QUINTUPLETS...

- by selecting the modifier, then the note, then clicking the staff.

ADD DOTS, TRIPLETS, AND QUINTUPLETS TO NOTES IN THE SCORE...

- by selecting the time modifier from the Note Palette, or with a keyboard shortcut, then clicking the notehead you want to modify.

ADD DOTS, TRIPLETS, AND QUINTUPLETS TO GROUPS OF NOTES...

- by selecting the notes with the arrow, holding down the option key, and clicking the appropriate box in the Note Palette, or using a keyboard shortcut.

REMOVE DOTS, TRIPLETS, AND QUINTUPLETS FROM NOTES...

- by selecting the note or notes, holding down the Alt key, and clicking the appropriate modifier again.

ADD DYNAMIC MODIFIERS (FF, MF, ETC.)...

- by selecting them from the Note Palette, or using a keyboard shortcut, then clicking the staff.

REMOVE DYNAMIC MODIFIERS...

- by clicking them with the Eraser.

ADD ACCIDENTALS (SHARPS, FLATS, AND NATURALS) TO THE SCORE...

- by selecting from the Note Palette, or using a keyboard shortcut, and clicking to the left of the note you want to modify.

CHANGE AN ACCIDENTAL ALREADY INSERTED IN THE SCORE...

- by choosing a different accidental and clicking the note you want to change

CHANGE STAFF ORDER...

- by Copying all the music in the staff you want to move, and Pasting it into the new staff. Select all the music on a particular staff by selecting the first note of the passage, then Shift-clicking on the last note of the passage.

HINTS FOR WORKING ONSCREEN

Keep the Score Setup window in a corner of the screen to manipulate the score as you work.

Turn Paged Score off so the score scrolls continuously right to left making it easier to enter and edit notes.

Give youself room to work on measures with many short duration notes by using a low setting in the Bars Per Line control in the Score Setup window.

Edit a section, or watch notes flash while playing a section by using a high setting for the Bars Per Line control. Picture quality deteriorates slightly when notes are jammed together at high Bars Per Line settings.

Drag notes horizontally to give yourself more room to work between notes in full measures.

HINTS FOR INSERTING TEXT AND PRINTING

In addition to inserting lyrics in a score, you can also use text boxes to insert non-musical information, such as titles, copyright information, composers, and so on at the top or bottom of a score. This is very helpful for inserting the written musical instructions that often appear in the upper left-hand corner of a composition.

Experiment with the white space above and below the staff (controlled from the Score Setup window), to create the most aesthetic layout, and to give yourself enough room for lyrics or other text.

If you store your scores in three-ring binders, make sure the margins are wide enough so you don't mutilate the score.

When storing multi-page scores in binders, you may want to punch the first page on the right, and the second page on the left. This way, when your binder is open on a music stand, the first two pages are visible at once. But make sure the margins are wide enough on both sides of the page, and the paper in your printer is centered.

MORE HINTS ON EDITING AND FINE TUNING

Eliminate a note in a chord by dragging it vertically until it merges with another note. Dragging notes changes their tone by scale steps (eight to an octave), so a sharp or flat note will only merge with another note if the accidental is removed.

Use "Two Tracks per Staff" when notes of different durations are played at the same time in one staff. For instance, if one note of a chord lets up while others are sustained, insert the note of shorter duration on the second track.

Copy verses and other long segments by clicking the first note in the musical segment, holding down the Shift key, and clicking a note at the end of the segment to be copied. Copy the selected segment, then paste the copy into the score at the flashing insertion point.

Polish score appearance by using Flip Note Stems on individual notes, by dragging notes horizontally if they are crowded, and by dragging bar lines to make more room or tighten up measures with too few or too many notes.

You can issue a "global" Beam command by using Select All in the Edit menu, then selecting Beam Notes from the Groups menu.

HINTS ON SOUNDS

Instruments are inserted in a score by measure and remain in effect until a new instrument is set. This makes it a good idea to assign a separate staff to each instrument. By keeping instruments in different staffs, you avoid difficulties if you want to change one of the instruments later. Using separate staffs for different instruments also makes it possible to create complicated rhythmic interplay between several instruments. For example, by using several staffs with different percussion sounds, you can score a drum or rhythm part.

In fact, you can make your Amiga into an elaborate "metronome" by layering several rhythmic tracks over each other. In the Score Setup window, you can change the playback speed with the Beats per Min setting, and play along with your rhythmic tracks or, of course, any other compositions.

Remember that with an external amplifier, you can further manipulate the sounds you generate. Experiment with echo or reverb and tone settings. If you have a graphic equalizer, try different settings to change the "color" of the sounds. In general, it is best to use a low volume setting in the Score Setup window, and to control the volume from your external amplifier

Be aware that each instrument loaded into *DMCS* requires plenty of RAM. Use Remove Instrument in the Sounds Menu to remove instruments you aren't using and free up more memory.

HINTS ON COMPOSING AND WRITING MUSIC FOR BEGINNING COMPOSERS

While *DMCS* gives you the tools to compose music, the real work of composing is still completely up to you. If you are a beginning composer, here a few suggested techniques for creating compositions:

PART-BY-PART

Write out a part (a melody, chord progression, bass line , or anything else), then play it back and add harmonies on a second staff. Play these two parts back together, make changes as you wish, then add a third part to the other two. Using 2 Tracks Per Staff with this method, you can produce up to sixteen parts.

MEASURE-BY-MEASURE

Write a measure of music on one staff, then play it back and write out parts on the other staffs for that measure. Play back the measure with all the parts, add a part for the next measure, and continue adding parts in subsequent measures. Complete the score measure-by-measure.

MODIFYING EXISTING MELODIES

Select a piece of music you are familiar with and copy the music into *DMCS*. Add a part, change notes or chords in the existing piece, copy one or more of the parts, but leave at least one staff blank and insert your own part in place of the section omitted from the copy.

USING THE PIANO KEYBOARD

Turn off the Insert Notes option in the Piano Keyboard window, and click keys on the Piano Keyboard to experiment with different melodies. When you have something that you like, practice it a few times, then click the Insert Notes box and play your melody again. *DMCS* enters the notes on a staff, but the notes are all be entered with the same note duration value. However, you can then edit your melody by clicking on individual notes and changing either the note duration or pitch. This technique is also good for inserting simple bass lines in compositions, by setting note duration to either a quarter or half note. Similarly, by setting the note duration to a whole note, you can insert the "fundamental" or "root" notes of a simple chord progression.

Use Copy and Paste to insert repetitive patterns of chords or notes. Then, on a different staff, insert different variations of a melody, different harmonies, or different instruments.

For more variety in your compositions, try using chord inversions when chords are repeated. To hear the differences between different chord inverstions for yourself, use Copy and Paste to put down 2 or 3 measures of a chord, then use the Invert Chord commands to change some of the chords. Mark your short "song" with Begin and End Section, and turn on Repeat Play. Choose Play Section to hear the results. Invert some of the chords from time to time and listen to the difference.

The best way to find out what works best for you is to experiment. Sometimes, just placing notes on a staff produces something interesting. (Sometimes it just produces noise...) But you can learn a great deal by entering notes (either randomly or more purposefully), then using the editing capabilities of *DMCS* to discover the effects of changing the pitch, dynamics, duration, and other variables of the music. By playing with the different ways of entering and editing music, you 'll discover what works best for you — and you may write some great music while you're at it.

IV GLOSSARY

The following glossary is divided into two sections: "Computer Terms" and "Musical Terms." The "Computer Terms" section contains terms used throughout this manual that apply to the general operation of computers. The "Musical Terms" section contains terms used throughout the manual that apply to musical subjects and operations.

COMPUTER TERMS

Channels — a communication path between a computer and a MIDI device.

Click — quickly press and release the mouse button. See also, "Double-Click."

Double-Click — two quick clicks of the mouse (left or right) in quick succession.

Drag — move the mouse while holding down the button.

Insertion Point — the blinking vertical line that indicates which measure the Measure commands affect and where *DMCS* will insert new material into the score. To set the insertion point in a particular location in the score, point to that location with the arrow and click the mouse button.

Kickstart Disk — the disk that contains the system files that the Amiga is currently using to generate such resources as the cold boot, font, and any desk accessories.

Pixels — the thousands of tiny dots that make up the images you see on the Amiga display. The *DMCS*'s screen resolution is 640 by 200 pixels.

Presets — computer generated instrument sounds that are preprogrammed and stored in a MIDI-compatible synthesizers.

Press — hold down the mouse button.

Preferences — a file included on the Workbench that allows you to control various features of the Amiga interface, such as color pigment, volume, the Clipboard, and so forth.

Select — point at a note or chord and click, or drag a selection box around a group of notes and/or chords. To select more music than can be seen on the screen at once, select material at one end, next scroll forward or backward, then select material at the other end while holding down the Shift key. See also, "Selection Box."

Selection Box — a box formed by holding the mouse button and dragging across a group of note with the arrow. *DMCS* selects notes within the box when you release the mouse button.

Shift-Click — hold down the Shift key on your computer keyboard while clicking with your mouse.

MUSICAL TERMS

Accidental — a symbol written to the left of a note indicating a change in pitch. A sharp raises pitch by one half step, a flat lowers pitch by one half step. A natural cancels the effect of a sharp or flat.

Amplitude Modulation — see Tremolo.

Bar — a synonym for measure.

Bar line — the vertical line drawn through a staff to indicate where one measure stops and the next starts.

Beam — horizontal line(s) connecting normally flagged notes that belong to the same metric unit.

Beat — the basic unit of musical time. See Tempo and Time Signature.

Chord — technically, three or more notes played simultanteously. In this manual, the term also applies to two notes played simulatneously.

Clef — a symbol which indicates the pitch of the tones on the staff where it resides.

Duration — the length of time a note sounds. See Time Signature.

Dynamics — variations in the loudness and softness of music.

Flat — see Accidental.

Half Step — the smallest interval in traditional Western music. A synonym for semitone. Half steps occur naturally between the 3rd and 4th tones and 7th and 8th tones in a standard scale.

Head — see Note Head.

Interval — the distance in pitch between two tones.

Key Signature — the sharps of flats which appear at the beginning of each staff or staff section indicating the key for the song or section of a song.

Legato — play smoothly, without interruption.

Measure — a musical unit containing a specified number of beats, divided from other measures by a beginning and ending bar line.

Meter — the regular grouping of beats into measures. See Time Signature.

MIDI — Musical Instrument Digital Interface. The acronym applied to the standard protocol that allows computers and MIDI synthesizers to communicate and work together.

MIDI Interface — the hardware link that establishes communication between the computer and a MIDI device.

Natural — see Accidental.

Note — a symbol that represents the pitch and duration of a musical sound.

Note Head — the round part of the note which indicates its duration value.

Note Stem — the horizontal line extending up or down from the note head. For eighth and shorter notes, the note's duration value is indicated by flags on the stem.

Octave — the interval between two tones which have the same letter name. There are twelve half steps in an octave.

Pitch — the term used to describe the relative highness or lowness of a tone.

Pitch Modulation — see Vibrato.

Quintuplet — typically a group of 5 sixteenth notes to be played in the space normally occupied by 4. In *DMCS*, any note or rest marked with the quintuplet sign is played at 4/5ths of its normal duration value.

Rest — a symbol indicating the absence of sound for a particular length of time.

Scale — an upward or downward progression of notes in regulated steps.

Semitone — see Half Step

Sequencer — an electronic device that stores musical information in digital form. Sequencers perform the same task as analog tape recorders, but they allow musicians to edit the music with more precision and control than traditional tape recorders.

Sharp — see Accidental.

SMUS-IFF — Simple Music Interchange File Format. A special file format that stores music in a compact form containing no graphic information. SMUS-IFF files can be imported and exported between different notation and sequencer programs.

Staccato — play as short distinct tones.

Staff — the group of 5 lines and 4 spaces on which notes are written.

Stem — see Note Stem.

Tempo — the speed of song, the pace at which it is performed.

Tie — curved line connecting two notes of the same pitch that indicates that the tone is to be held for the number of beats represented by their combined value.

Time Signature — the numbers appearing at the beginning of a song or song section which indicate how many beats there are in each measure (shown by the top number) and which note gets one beat (the bottom number); for example, 4/4 time means 4 beats per measure and the quarter note gets one beat.

Transpose — rewrite a song or section in a different key from the one in which it was previously written.

Triplet — typically a group of 3 eighth notes to be played in the space normally occupied by 2. In *DMCS*, any note or rest marked with the triplet symbol is played for 2/3rds of its normal duration value.

Tremolo — quavering; rapid repetition of a note. Also known as amplitude modulation.

Vibrato — wavering tone. Also known as pitch modulation.

NOTES

APPENDIX

NOTES

APPENDIX A: USING MIDI

MIDI (Musical Instrument Digital Interface) protocol lets you play your DMCS music through MIDI compatible synthesizers. There are many different synthesizers available, and although MIDI is a standard protocol, the way in which synthesizers operate and process MIDI information is not standardized.

DMCS' MIDI capabilities will differ depending upon the synthesizer and MIDI interface you use with your computer. For instance, although *DMCS* can handle up to 16 MIDI channels and up to 128 preset MIDI instruments, your synthesizer may only be able to handle 4 channels and may contain only 32 voices.

When you create a score that will be played through a synthesizer, you don't use *DMCS* instruments. Instead, you use the instruments that are preset in your synthesizer. Each synthesizer instrument has its own number which is known as a preset number. Thus, when you want to change instruments in a MIDI score, you change the preset number for the measure. Staffs should be assigned a specific MIDI channel that should be used for that particular staff all the way through the score. For example, if your synthesizer has the ability to play 4 voices at once, you would create a 4 staff score and assign staff 1 to MIDI channel 1, staff 2 to MIDI channel 2, and so on. You can use different MIDI channels and preset instruments at different points in the score in the same way you can with *DMCS* instruments. To avoid confusion, however, you should always try to use the first channel assigned to each staff all the way through your score. Figure A.1 below shows a *DMCS* score which has been assigned MIDI channels and presets. Notice how channels are assigned per staff, while presets are assigned per measure.

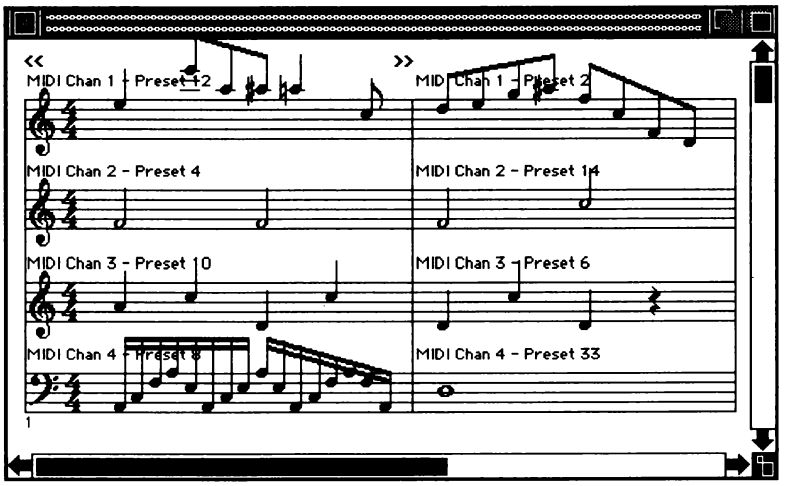


Figure A.1: A MIDI Score

Deluxe Music Construction Set's MIDI capabilities are activated by choosing the MIDI Channel # option from the Sounds menu. It would read "MIDI Channel 2" if *DMCS* were set to MIDI channel 2.

MIDI CHANNEL

Opens a requester in which you set any of up to 16 different channels. The actual number of MIDI channels you can use is determined by your synthesizer's capabilitties. See your synthesizer's Owner's Manual for information on the number of MIDI channels it supports. The number of the channel currently chosen is shown at the end of the MIDI Channel # command.

MIDI PRESET

Opens a requester that lets you set the MIDI preset number. *Deluxe Music Construction Set* uses the MIDI standard of 128 preset instruments, numbered from 1 to 128. *DMCS* recognizes preset 0 as "none." But some synthesizers number their presets from 0 to 127. If your synthesizer uses this numbering scheme for its presets, then you

must do some simple math in order to assign presets. For instance, if you want to use preset 0 from your synthesizer, then you would assign preset 1 in the score, because that is *DMCS'* first *real* preset. The synthesizer's preset 1 would be assigned as preset 2 in the score, preset 2 would be assigned as 3, preset 3 would be assigned as 4, and so on.

Many synthesizers, however, number their presets in the same way as *DMCS*. Also, even though MIDI protocol and *DMCS* support up to 128 presets, not all synthesizers are equipped with that many presets. The actual number of presets that you can use in your music is determined by the number of presets stored in your synthesizer. See your synthesizer's Owner's Manual for information on the number of presets it supports, and how they are numbered.

MIDI SETUP

Opens a requester that lets you change the preset number and input delay (see Figure A.3 below).

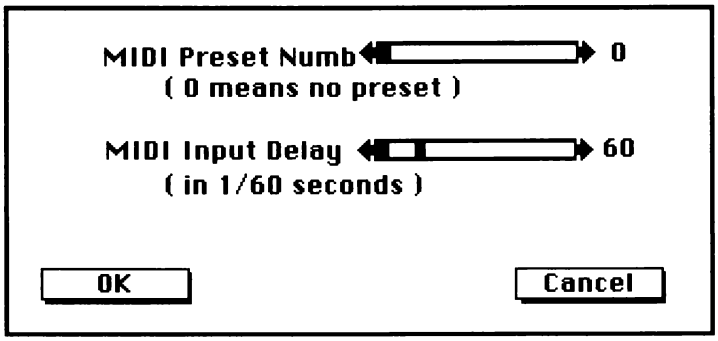


Figure A.3: MIDI Setup Requester

The Input Delay gadget lets you set the time a note delays before it starts cycling to longer durations. When you play the MIDI device, the input delay is the amount of time, measured in sixtieths of a second, that must elapse before the inserted note changes to the next larger note duration. For example, if you select a quarter note from the Note Palette and the input delay is set at 60 (60/60ths of a

second, or one second), then playing a note for less than one second inserts a quarter note in the score, playing for one to two seconds changes it to a dotted quarter note, playing for two to three seconds changes it to a half note, and so on.

MIDI ACTIVE

Shows if MIDI is currently active. If it is active you can play your score through your MIDI device.

MIDI INPUT ENABLED

Shows if MIDI input is currently active. If it is active, you can enter music in the score from your MIDI device.

USING SEQUENCER FILES

A sequencer is a device that records and plays back instructions to a programmable musical instrument. With the proper software and a MIDI interface, your computer can act as a sequencer. The difference between *DMCS* and sequencer software is that sequencer software can record the music you play in real time. This means that you can play your music at its normal speed — the software doesn't need you to play slowly. Even though *DMCS* can accept music input from a keyboard fairly quickly, it's still not as fast as dedicated sequencer software.

Of course sequencer software lets you store and playback your compositions, but you must have a synthesizer in order to listen to the playback. Most sequencer software won't let you replay your piece through the computer's speaker. Likewise, sequencer software will not print sheet music from your input as *DMCS* will. In fact, many versions of sequencer software won't even show you what your music looks like onscreen, thus you can't add lyrics or other music notation.

So you see, even if you use a sophisticated piece of sequencer software, *Deluxe Music Construction Set* is still an essential tool for editing, documenting, and printing your music in standard format. You can use *DMCS* with any sequencer software that can save and read files in SMUS-IFF (Simple Music Interchange File Format) format.

SMUS-IFF is a standard file format that allows you to save a score as a special file that can be used by different music programs. SMUS-IFF files contain compact information that describes the music and score without graphics. Using this flexible file format you can "export" *DMCS* files *to*, or "import" files *from* sequencer programs such as MidiMac™ from Opcode Systems.

SAVING DMCS FILES IN SMUS FORMAT

To save a *DMCS* score in SMUS format, use the following procedure.

1. Pull down the File menu and choose Save As SMUS File
2. Now the Save As requester appears, containing the current name of the file.
3. Enter a new name for the file and click the Save button to save the file in SMUS-IFF format. You'll now be able to open the file with your SMUS-compatible sequencer software.

OPENING SEQUENCER FILES IN DMCS

When you want to add lyrics to, or print out sheet music for a song you've recorded with SMUS-compatible sequencer software, you can open and work on the file with *DMCS*.

1. If your sequencer software gives you the option to save your files in more than one format, make sure you use SMUS-IFF format.
2. Quit the sequencer software and start *DMCS*.
3. Choose Open Score from the File menu.
4. If the sequencer file is in SMUS format, it is shown in the Open Score requester. Double-click the file name of the SMUS file to open.
5. The score opens in sheet music format, but without lyrics, dynamic modifiers, and other special notation. You can now edit the score as you would any other *DMCS* score.

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CREDITS AND ACKNOWLEDGMENTS

Software Design and Programming: Geoff Brown with John MacMillan
Producer: Stewart Bonn
Technical Director: Steven E. Hayes
Assistant Producter: Jon Medek
Product Manager: Stan Roach
Documentation: David K. Simerly with Jim Wake, Patria Brown, and Michael S. Miley
Art Direction: Nancy Fong
Package Design: Davison Design
Cover Illustration: Milton Glaser
Artist Photo: Frank Wing
Icon Design: Kit Comick Design, Denver, Co. & Paul Reiche III
Biography: David Grady

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MANUAL BY DAVID K. SIMERLY
WITH JIM WAKE AND PATRIA BROWN
ADAPTED FOR AMIGA BY MICHAEL S. MILEY

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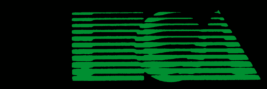

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